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ABSTRACT

Included in this document are 29 working papers presented at a Moscow seminar on Pre-Vocational Training, Education and Vocational Orientation Within and Outside Schools. Selected topics of the papers are: (1) System Of Labour Instruction, Education, and Vocational Guidance In U.S.S.R. Schools of General Education, (2) The Role of The Factory Community In The Labour Education Of Young Students, (3) The Training And Improvement Of The Qualification Of Teachers Of Workers Education, (4) The Personality Of The Pupil, (5) Psycho-Physiological Problems Of Vocational Adaptability, (6) Training For Work And Vocational Guidance In The Rural Schools, (7) Out-of-Classroom Work In Vocational Training Establishments, As A Means Of Promoting The Young Workers All-Round Development, (8) Determination of Vocational Suitability Of Adolescents For Work In Industry And Agriculture, (9) Role of Vocational Orientation In The Preparation Of Pupils For Work, (10) Organization of Vocational Guidance Work in the U.S.S.R., (11) Vocational Orientation Of Youth In The Soviet Socialist Republic Of Georgia In Relation To Basic Occupations, and (12) Radio and Television in the Education of Young People for Employment and as a Means of Popularizing Trades and Occupations. (JS)

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Working Paper on

SYSTEM of LABOUR INSTRUCTION, EDUCATION and VOCATIONAL GUIDANCE in U.S.S.R. SCHOOLS of GENERAL EDUCATION

This material has been prepared by the Workers' Collective of the Scientific Research Institute for Labour Training and Vocational Guidance of the U.S.S.R. Academy of Pedagogical Sciences: Yu.K.Vasilyev (Doctor of Technical Sciences, Director of the Institute); A.E. Golomztok (Doctor of Pedagogical Sciences, Director of the Vocational Guidance Department-(general problems)) A.G. Dubov (Doctor of Pedagogical Sciences, Director of the Labour Training and Vocational Guidance Dept. in classes IV - VIII); V.A. Polyakov (Doctor of Pedagogical Sciences, Director of Labour Training and Vocational Guidance Department. classes IX - X).

The U.S.S.R. has successfully achieved universal secondary education for young people. It can be obtained after finishing an eight-year school of general education, in various ways: by taking IX-X (XI) classes at a day school of general secondary education (the basic method); attending technical colleges and other special secondary educational institutes; attending trade-or-technical schools over three to four years, which train qualified workers with secondary education; by evening and correspondence secondary schools of general education, established for young workers and pupils of vocational or professional technical schools.

Day schools giving secondary general labour and polytechnical education produce annually, millions of young men and women. Leavers from such a school and also from technical schools and occupational or vocational technical schools fill the ranks of institutes and universities, secondary special educational institutions, and schools offering vocational or occupational technical education. Most of the students finishing school, after undergoing vocational instruction (in factories and other organisations), constitute the 'cadres' of workers in industrial concerns, in agriculture and in labour services to the population.

The educational and training process in a school of general education is aimed at developing the pupils' personalities from all angles. This is the aim of the general and polytechnical, moral, labour, physical and esthetic education given to the pupils. As a result, the pupils leave the school with a sound knowledge of the principles of social and natural and mathematical sciences, a scientific outlook on the world, deeply conscientious and prepared for life and a conscious choice of profession or occupation. The systematic and deliberately-directed work done in the subjects of work education, training and vocational guidance plays an important part in forming the personalities of the students.

Work education is a constituent part of the education required for the all-round development of personality - a system of pedagogical influences directed towards shaping in children, adolescents and young persons the need to labour for the general benefit, and interest in, and love of, labour and a conscientious and honest attitude towards it. It is implemented in the process of all the teaching and educational work carried out with the pupils of the school by factory workers, the family and society in general.

Work training is a compulsory teaching subject for all schoolchildren, its aim being to improve the polytechnical education of the pupils, furnish them with pre-vocational training, promote their work education and help them to make a conscious choice of trade or profession.

The vocational guidance given to pupils forms a component part of the instructional-educational work done with pupils, aimed at preparing them for a conscientious choice of trade or profession which will suit the needs of society and also their personal abilities and state of health. In its character and essence the problem of vocational guidance is a social problem - in its scale and approach to decision it is a State problem, in the methods adopted for taking decisions it is a psychological and pedagogical problem and in respect of the results obtained, a social and economic problem.

The introduction of a system of work training and education into the Soviet general educational school is linked up, above all, with the names of N.K. Krupskaya and A.S. Makarenko.

Under the direction of N.K. Krupskaya, the targets of and methods for bringing polytechnical work training in schools into effect began to take clearly-defined form in the 1930's and have retained their full importance up until the present time.

The practical experience of A.S. Makarenko and his ideas on labour education in a collective, for the collective and through the collective are being creatively developed in the large-scale general educational school.

The whole work done in labour education, training and vocational guidance of school children constitutes a complete or integral system. Nevertheless, each of the component parts of this system has its particular peculiarities which are dealt with hereunder.

Work training and education. The aims and objectives of the work training and education of pupils in a general educational school are determined on the basis of Marxist-Leninist ideas regarding polytechnical education and the need for combining teaching with the productive labour of the 'up and coming' generations. Furthermore, consideration is given therein to the demands for social progress and for the revolution in science and technology which is being achieved.

Present-day production is characterised by a high level of automatisation and mechanisation, by the utilisation of all forms of power known to man, by a wealth of physical, chemical and other processes, by the creation and utilisation of new highly-effective materials and by highly productive technological processes.

In their turn, the special features of present-day socialist production determine the demands for the training and education of the future worker. The principal demands cover a high level of general education and vocational training, the polytechnical character of the knowledge and skills involved and a conscientious attitude to work.

In the process of imparting polytechnical education as a whole, and labour training in part, to school children, they acquire specific types of knowledge, skills and personality qualities, namely:

a) Polytechnical knowledge of the principles governing the main branches of contemporary production - the typical and most commonly-encountered technological subjects. (Machinery, appliances, mechanisms, instruments). The basic technological processes (mechanical, chemical, power-generation and biological), the structure of an enterprise, the economy and organisation of production and production relationships.

b) The polytechnical skills which can be utilised in various types of manufacturing activity (they include skills in planning forthcoming work, organising the labour site, auto-control, and also the measuring, calculating, graphical-designing, processing, erecting, assembling and the experimental, diagnostic and construction skills, as related to the cognitive capacities and age of the pupils.

c) Certain special knowledge and skills in handling technical objects and carrying out technological processes which are necessary in order to get pupils acquainted with productive labour at pro-vocational level.

d) The personal or individual qualities which ensure a voluntary, conscientious, creative and honest approach to labour for the common good - organised at a highly cultural level.

e) Knowledge of the content and conditions of labour in the basic mass vocations or occupations of the national economy in the matter of supplying services to the population.

In giving the schoolchildren labour training, the State laws on the protection of child and adolescent labour are strictly complied with, and the requisite care is evinced for creating conditions for the pupils to work in safety and to maintain and strengthen their health. The concrete targets and the content of labour instruction as a school subject are determined so as to conform with the basic age levels - junior, intermediate and older-age pupils.

Two hours a week are allotted in the school curriculum to labour instruction in each class. In addition, in the V-VII and IX classes practical work in production training is organised. The teaching syllabuses are drawn up by the Academy of Pedagogical Sciences and approved by the Ministry of Education.

The teaching syllabuses for classes I-III include basically the following:

a) Study of the basic qualities of materials in wide distribution (paper, cardboard, plastics, woven materials etc.), and acquiring a knowledge of the methods of processing those materials using the simplest tools employed in hand labour.

b) The development of technical thinking and creative abilities, while acquiring a knowledge of the basic principles of the art of drawing or designing, participation in modelling the objects manufactured and in the choice of materials and tools, carrying out agricultural experiments in growing house, vegetable and garden plants and in observation of the life of domestic animals.

c) Inculcating an interest in, love and close knowledge of work in the process of preparing socially useful articles (toys, games, models, dummies, etc.), and the performance of agricultural operations that can be carried out in a school department for experimental training.

d) Gradually accustoming the pupils to the productive work of grown-ups (talks with workers and collective farm workers, excursions, etc.).

Workrooms are set up in schools which are equipped with the necessary instruments, materials and other apparatus for work lessons and also with visual-teaching appliances.

For the purpose of giving lessons to pupils in schools, workrooms are set up, equipped with the necessary instruments, materials and other appliances for work lessons, and also with visual-teaching appliances. Lessons in work training are given by a teacher of primary classes who has acquired the requisite training in a teacher-training institute, teacher-training school or supplementary training at courses and seminars in an institute for giving refresher courses to teachers.

Work teaching in classes IV-VIII is directed towards further development of the knowledge, skills and personal qualities acquired by the pupils in classes I-III. The teaching syllabuses provide for gradual training in more complicated labour skills and knowledge of a polytechnical nature, viz:

a) Systematized knowledge and skills in general technical problems - the principles of machinery-handling, electrical engineering and technical drawing.

b) Knowledge and skills in performing technological operations using hand-tools, appliances, mechanised tools and certain technological machines (depending on the manufacturing environment of the school, the wishes of the pupils and the possibility of creating a good teaching material base; this knowledge and these skills are developed in the processing of metals, paper pulp, plastic forms and other such materials, sewing and the performance of cooking operations, or agricultural work).

c) Ideas on production techniques and technology, the labour of qualified workers and collective farm employees.

d) The knowledge and skills required for creative work in producing socially useful products (for this purpose pupils will be given lessons in construction and technical modelling, elementary designing, agricultural-experimental work and experiments in testing the articles produced).

e) The qualities of personality which ensure moral and psychological readiness to work for the common good, to observe and develop correct relationships between people in the collective work process.

If they so desire, pupils in classes VII-VIII may widen and deepen their labour training at factory lessons (e.g. in the mechanical processing of materials, wireless electronics, and the study of agricultural machinery).

Schools have the requisite tutorial workshops and experimental-teaching sections for giving lessons to their pupils. Depending on local circumstances, it is not infrequently found more effective to set up inter-school workshops for a number of schools located near one another. In village schools, pupils in the eighth, and sometimes even the seventh classes, are given lessons in agricultural labour, not only in the school's experimental training department, but also as members of a school production brigade.

Lessons to pupils in workshops are given by instructors in work education who have been trained in pedagogical institutes (faculties for industrial-pedagogical subjects, artistic designing, etc.), in pedagogical technical colleges and schools or who have received special training in long-term courses in institutes giving teachers refresher courses. Biology teachers quite often give lessons and practical production training in the experimental teaching sectors. Engineering and technical workers, agronomists, zoo-technicians and qualified workers who have a bent for teaching work, are also recruited as teachers.

Training for work in classes I - VIII as a whole, constitutes the first pre-vocational grade. On the basis of this training, further pre-vocational and vocational training is organised.

Training for work in classes IX - X (and in some Union republics even in class XI) completes the system of training school-children for work. It is carried out by adaptation to one of the fields of technology and labour and constitutes the second grade of pre-vocational training, although in individual cases the pupils even have a command of the primary knowledge, skills and techniques relating to the particular vocation.

The fields of technology and labour selected for work training comply with three main conditions:

a) Close touch with one or several school subjects in the range of natural science and mathematics (this is necessary in order to overcome narrow professionalism and to satisfy the inquisitive interests and abilities of the pupils).

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b) Close touch with one of the leading branches of present-day production (this is necessary for strengthening the polytechnical trend of labour training and the more effective planning of the actual process of training and education).

c) Ability of pupils to grasp a subject (what is envisaged is limitations of age and physique).

In accordance with these conditions, it is recommended that work training be given in the following branches of technology and labour: metal-processing, wood-processing, electrical engineering, wireless electronics, the motor car, the tractor, the manufacture of woven goods and their processing, applied chemistry, agricultural chemistry, technical drawing, rearing of livestock, vegetable growing, fruit growing.

Lessons with pupils are organised in the form of polytechnical work-practice institutes. Each school has, as a rule, not less than two different polytechnical work practice departments.

If they so desire, pupils may additionally attend faculty lessons (2 - 4 hours a week) at which their work training is intensified in the direction selected. In such case, the pupils are given the right to sit for qualification examinations. Those who successfully pass such examinations are given a certificate that they have acquired a knowledge of the relevant vocation. Primary vocational training is, in most cases, directed to such jobs as driving a motor-car or tractor, processing metal and various forms of agricultural work.

The teaching programmes in each of the work-training departments provide for training in special knowledge and skills but, if they train in any of them, the pupils must also acquire:

a) General technical information about mechanisms, fittings, appliances and machinery (as, for instance, the techniques needed in that branch of production with which work instruction is connected).

b) Polytechnical information about engineering, technology, the organisation and economics of production (based on the example of a factory of a particular type).

c) Skills in organising a working site, in complying with the rules for technical safety, and in work.

d) Information about the content and conditions of work in large-scale trades or vocations (as applied to a particular branch of production).

The training of pupils is carried out on the basis of what is socially useful, including factory labour. Great attention is paid to associating pupils with progressive collectives of workers and collective farm employees and this exerts a favourable influence on the inculcation of such personality qualities as collectivism, the communist attitude to work, thrift, powers of initiative, sense of discipline, a critical attitude to oneself and one's comrades, organisational ability, truthfulness and other qualities.

Schools have fitted out laboratories (workshops, laboratories, in the creation of which, great help is given to schools by industrial enterprises, collective and State farms. In addition, enterprises build and equip teaching workshops and tutorial-production combines (usually for the pupils of several schools). Collective and State farms arrange for the organisation of student agricultural production brigades.

Lessons to pupils are given by teachers who have graduated from a faculty of industrial pedagogy, teachers of physics, chemistry, biology and drawing, who have received supplementary technical and production training, the best engineers, agronomists, technicians and qualified workers.

Lessons in work instruction in all classes are given in such a way as to develop the cognitive activity of pupils so that they will be able to acquire knowledge and skills on their own initiative. To this end wide use is made of such methods for the pupils' work as exercises (intellectual and mobile), observations, teaching experiments, solving production problems, work on educational (technical and reference) literature, elementary designing of manufactured articles. On his part, the teacher directs the whole of the pupils' activities, explains theoretical problems, demonstrates visual-teaching appliances, experiments in, and methods of performing operations of work; he inculcates the personality qualities in pupils that characterise progressively-minded workmen and supervises the labour-training activities of the pupils.

The foregoing methods are applied in groups in which lessons are organised in different forms: lessons (lasting ninety minutes with a break after forty-five minutes) of a theoretical and practical character, trips to a factory (to exhibitions and museums), practical factory experience etc.

Practical lessons are organised for groups numbering not more than eighteen persons.

Teachers giving work training regularly receive the necessary assistance from institutes giving refresher courses to teachers, by raising their theoretical and methodological standards. This aim is served by the publication in very large editions of methodological handbooks and recommendations and also by a special periodical: "School and the Factory". The relevant teaching textbooks are published for pupils of senior classes.

Training for work is indissolubly connected with work education and acts as one of its important media. Nevertheless, work education of pupils in schools is implemented also in the process of socially valuable work done in overtime hours, self-service, club activities and meetings with progressive working men. Special "Harvest Days", "Forest and Garden Weeks" and other collective activities are held. Great attention is also given to regular individual educational work with pupils. Many-sided are the types of educational work conducted in institutions outside schools (laboratories for young technicians or young naturalists, juvenile motor-driving tracks, children's railways, clubs, houses of culture, palaces for pioneers and school children). During the summertime, pioneer camps are organised for secondary school pupils and work and leisure camps for older pupils, in which there is a rational association of active leisure and socially useful work.

In our country the school solves problems of work training and education with the wide support of industrial and agricultural undertakings. Serious thought is given to creating a sound association between school and factory.

The coordination of all scientific research and methodological work in polytechnical training and education for work is carried out by the U.S.S.R. Ministry of Education, the U.S.S.R. Academy of Pedagogical Sciences and its scientific research institutes.

The country's national economy needs workers with secondary education who can quickly and qualitatively grasp a complicated problem of present-day engineering and technology. Accordingly, one of the principal aims of the school is to give vocational guidance to pupils, to evoke the pupils' interest in working trades or vocations and to try to obtain secondary general education, and on that basis, vocational training.

In the process of vocational guidance, we make it our purpose to harmonise the interests, bents and wishes of the pupils with the national economy's needs for qualified executives (cadres). At the present time, our country needs qualified 'cadres' who love their work to act as 'cadres' in various branches of the national economy and in different specialised trades. There is a particularly acute need in such trades or vocations as lathe-operators in machinery construction, workers in electrical engineering, builders, employees in service occupations, agriculture, etc. Accordingly, when we carry out vocational guidance work, it is absolutely necessary to bear in mind the requirements of the national economy both on the general national and on the local side.

We endeavour to see that every school has a programme of vocational guidance work both with the pupils and with the parents, so that this programme should be based upon problems of the national economy and the real possibilities of finding jobs for pupils. The objectives of training pupils for work and for deliberate selection of a vocation or trade are solved by the whole system of polytechnical education, work instruction and training. Vocational guidance in school performs the function of acquainting pupils with a very wide range of trades or vocations (they may not even form part of the school curriculum), by thoroughly acquainting them with those branches of production, vocations or trades and the teaching institutions, which correspond to the range of interests, the bents of the pupils, their abilities and also with the function of helping them in the conscious and correct choice of trade or vocation, and shaping and developing the pupils' vocational interests. In this sense, vocational guidance supplements the work of the school as laid down in the teaching programme.

In the process of teaching school subjects (natural science, mathematics, humanities, sociology and politics) teachers acquaint the pupils with the different branches of production and trades or vocations. In many schools, methodological societies of teachers, recommend studying the technological processes used in local factories and the labour content of leading workers in order to link up the teaching of a school subject with the aims of supplying pupils with vocational guidance.

Great opportunities for acquainting pupils with vocational labour are afforded by work lessons and faculty lectures. The shape given to practical labour colleges is selected within the limits of the basic branches of the national economy, taking into account the production-environment of the school, the special features of the economic development of the particular region and the individual interests of the pupils. Accordingly, labour training directly prompts pupils to select the vocations needed by the national economy. In the case of faculty lectures, the subject is studied at greater depth and is linked up with a particular productive activity.

In some general educational schools, instruction is differentiated according to the basic natural science and scientific disciplines: physical mathematics, chemistry and biology. There are also special mathematical, musical, artistic and other schools in which pupils make a more thorough study of disciplines in the direction selected and familiarize themselves with new vocations in a particular branch.

The work done with pupils in instructional lessons is supplemented by a system of activities outside the classroom and the school. In pupils' clubs, in centres for young technicians and naturalists and in students' agricultural brigades, the students test their abilities in various spheres of work.

In addition, there are special forms of work done in the sphere of vocational guidance.

Meetings with specialists are held in schools or factories, in institutions, and in educational establishments, (so-called "open-door days"). As a rule, such work is organised by classroom directors and pioneer leaders.

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Excursions or trips to factories are organised by the school after consultation of, or arrangements made with, factory or works directors, etc. Here the students get acquainted with production and the basic working trades or vocations.

'Interest' groups are composed principally of older students, (who have similar vocations in mind). In these (under the supervision of teachers or specialists invited by the school) the students discuss literature that has been specially recommended to them, the impressions gained from trips and meetings held with representatives of particular vocations, make models of particular projects, albums, displays, etc.

Students' societies are organised in the form of clubs of young specialists, youth technical clubs, etc. Their activity is based on the initiative of the students, which is aimed at gaining theoretical and practical familiarization with trades or vocations. The societies are directed by representatives of factories, pioneers' palaces, scientific research institutes, higher educational establishments, etc.

Debates are conducted on the basis of the pupils' prior knowledge of a series of trades or vocations. They cover such popular subjects as, for instance: "The personal and the social aspects of choosing a trade or vocation", "Interesting and uninteresting matters", "Who has the best knowledge of a favourite trade or vocation?", "What do you know about the vocations or trades in our factory?", etc. The debates help in ascertaining and shaping the socially significant motives students have in choosing a trade or vocation.

The theses or papers on trades or vocations are usually written by students leaving an eight-year school. At the beginning of the school year, teams of 2 to 3 persons select for more intensive study, one of the trades or vocations in which they are interested and which are needed by the factories or enterprises in a particular micro-region. Outside school hours, the students visit the enterprises, educational institutions, etc., read up the literature, hold consultations with specialists and then, on the basis of the material collected, proceed to write the paper.

Professional guidance 'corners' are established by the school officials (with the assistance of factories, collective farms and State farms) in order to familiarize the students with the trades or vocations which are needed in a given region (town). Lists are displayed on notice-boards of the vocations, with a short description of them, lists of the literature or reading recommended, photographs of the work-sites, directions as to where advice can be obtained about starting training or work and other information.

In school conditions we do not make it our aim to ascertain the suitability of students for particular trades or vocations. The conditions requisite for this purpose do not exist (except in individual cases), and the actual problem of vocational guidance itself has still not even been sufficiently studied from the theoretical angle. It is, accordingly, merely a matter of trying to help the pupil to choose the direction to be followed for further training or for work, depending on the results of his work in and outside the school, as observed by the teachers over a period of several years.

In schools, the teachers study the personality of the students as their educational instruction proceeds, ascertain and develop their interests and preferences, recommend them to follow one or other line of faculty or club work. The school doctor keeps an eye on the state of the students' health, determines the special features of their physical development and elicits their basic vocational limitations. The classroom director sums up the results of the studies made of the students and compiles a review or report on their personality in which he sets out the reasons or grounds for the preferable direction to be followed in his trade or vocational career.

Working with students is one of the directions in which vocational guidance operates. The other is the work to be done with parents: acquainting them with the possibilities open to their children for entering employment and taking up training, getting them to conduct active propaganda for vocations among school pupils.

The leading role in preparing pupils or students to choose a vocation or trade lies with the school. But the effectiveness of this work depends on co-ordinating the work of the various institutions and enterprises which must represent in the country the State service or department for the vocational guidance of young people. Much has already been done in this direction. In 1967, Republican State Committees of Councils of Ministers for the utilization of labour resources were set up. Districts and provinces have departments of these committees, while regions have commissioners for finding employment or jobs for young persons. The State committees decide on the following basic problems: they work out ways and means of training qualified workers, finding employment for the population; notify the interested institutions about the needs for trained executives (cadres) in the relevant trades or vocations; in conjunction with the planning and economic bodies they elaborate and put into effect proposals for the rational utilization of labour resources. The co-ordination of this problem has been entrusted to the State Committee for professional and technical education. The U.S.S.R. Academy of Pedagogical Sciences has a council attached to it for dealing with the problems involved in vocational and technical education.

Special commissions have been set up in each region under the local government authority departments for the purpose of organising the settlement in jobs of school-leavers. They receive from factory subdivisions, requests for work-hands and give the schools recommendations on the trades or vocations towards which it is important to direct the training of students. On the schools' recommendation, the commissions direct the young persons to factories, institutions, collective and State farms and building sites, where the young men and women are first given vocational instruction and are then employed as workers.

Vocational guidance centres have been opened in a number of factories in the 'cadre' or workers' technical training departments. As a rule, these are specially planned premises where talks and consultations are held regularly with students about a particular factory and its basic trades or vocations. Each such centre annually prepares a plan of operations which provides for the participation of factory specialists and the employees of vocational technical schools in working with students and also for conducting educational work with young workers in order to get them adapted in the speediest possible time to production-line work. The centre is directed by one of the factory's executives (performing a number of jobs) who form an activist group from among the engineers and technicians, progressive workers and representatives.

In order to help schools in methodological science, several republics have set up special vocational guidance centres. They assemble and distribute to schools, information about finding employment openings and obtaining admission to educational training institutions; they hold methodological work sessions with teachers, organize a consultancy office to deal with enquiries and in special cases, an advice office for medical and psychological problems connected with the choice of a vocation; they carry on large-scale and individual work with the students.

Methodological assistance to teachers is given also through institutes for improving teachers' qualifications (refresher courses) where special lectures and seminars on problems of vocational guidance to students are provided for object-lesson teachers and school administrators.

The work done in giving pupils vocational guidance in conjunction with labour-political instruction, yields perceptible positive results. Every year, after finishing the secondary polytechnical school of general education, the working class in our country is enlarged by fresh teams of young persons equipped with the requisite knowledge and skills which adopt a creative and conscientious attitude to labour, love work and are capable of solving the tasks of social and scientific and technical progress.

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Working Paper on

THE ROLE OF THE FACTORY COMMUNITY IN THE LABOUR EDUCATION OF YOUNG STUDENTS

BY

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The older generation of work 'cadres' in our country seeks to direct its powers towards educating young persons in the spirit of our glorious labour traditions. This is a lawful ambition. The ability of younger generations to take over the succession in developing their material, and spiritual creative powers depends to a considerable extent on the content and effectiveness of this educational work.

The content and organisational forms of the educational work done by the older generation with the younger vary very widely. In many factories and works there are school-assistance councils, for labour or production instruction. Labour veterans in the Leningrad factory, "Electrosila", the most experienced production workers,(with 20-45 years' experience) act as expert teachers of young workers. They direct youth schools and communist work brigades and, day after day, they train the pupils and the young workers in foremanship, inculcate in them a love for their profession, keep an eye on how they behave in daily life, take a painstaking interest in the causes of breaches by them of work discipline. The Council of Pensioners of the Moscow factory of low-powered motorcars devotes a great deal of attention to the working and student youth. Under the slogan: "Every cadre worker is the social teacher of the younger generation", there operates a collective of the "S. Ordzhonikidze" of the Podolsk heavy-engineering works. Similar groups of supernumerery youth teachers from regular workers have been set up in enterprises and on building sites and in youth hostels. "Let each of us become a teacher of the new young generation of the working class. Good workers help to set a young man on a firm footing. We have thousands of such work-hands." Say the representatives of the factory community.

In the contemporary stage of the development of our society, the social value of the educational work done by work collectives with young persons is determined by its basically new character and content. In the first place, the pedagogical element forms an organic part of the everydat activity of the production collective; furthermore, it is an obligatory and necessary factor for achieving the optimum technological and economic results of labour; secondly the pedagogical element is one of the vital indices of the work done by production leaders.

Furthermore, the social and pedagogical effectiveness of the work done by the production collectives with the trainees is determined, firstly, by an enrichment of the content of the educational work done with the young; secondly, by the possibility of an organised inclusion of pedagogical personnel in the everyday activities of the workers themselves; thirdly, by an expansion of the scope of pedagogical devices for influencing the personalities of young persons, and on their consciousness that is being formed.

1. How and at what cost is the content of the educational work done with young persons being enriched?

This derives primarily from the emergence of the new possibilities offered by an enterprise for the vital activities of the young person: the widening of his cognitive and, primarily, his polytechnical outlook in acquiring a knowledge of production as a whole and its separate trades and services; the inclusion of the trainee in the system of the practical operations of the labour collective, and finally, the need for the young person to play an active part in the community, the characteristic feature of which is his realisation that he belongs to the working class as the master of the country, and hence also the generation in him of a feeling of social responsibility for his acts and behaviour.

In this connection it is essential that the labour collective should take under its control all aspects of work with young persons: creation of the optimum conditions for combining training with productive work (teaching sections, guilds, workshops); the performance of occupational guidance work; the giving of vocational assistance to the trainees in acquiring occupational or vocational skills and techniques; the improvement of the foremanship skills of those in charge of the practical production work of trainees; contact with the school, more especially in problems of methods of instruction and education.

As a general rule, people work in factories in families - children take the place of their fathers. Accordingly the children begin to become acquainted with the enterprise early on. This is encouraged also by the plans for the instructional and educational work of schools which, are drawn up jointly with the heads of educational districts. These include such problems as holding excursions with the pupils of classes V-X, to visit production workshops; discussions with trainees and their parents about organizing work instruction for senior pupils in schools; holding evening meetings of VIIIth-class pupils on subjects such as "Who shall I be?"; "The shining lights and best people in the works"; discussions (in groups) with pupils of the IXth class about the enterprise, its aim or targets and its place in the general economy of the country; and also about the content and function in the factory of various work specialists (turners, milling-machine operators); the holding of general meetings of pupils in senior classes (with the participation of the director, chief engineer and other factory executives) with the issue of passes and thereafter, discussions with the trainees in the guilds on the subject: "You have been admitted to the works, and so you are a member of its glorious collective.".

It is specifically the broad participation of the factory community which ensures the thoroughness and the systematic nature of the vocational guidance work performed under a joint school and factory plan. The production workers equip the teachers with the necessary special skills for the performance of this work. On the basis of the school workshops they organise seminars with the primary class teachers while on the basis of production sectors, this is done with teachers of classes V-VIII and higher. All this enables teachers to make much wider use of the factory as a basis for the polytechnical instruction of pupils and thereby give greater content to the vocational or occupational guidance of the pupils. This is also encouraged by the social contacts of production workers with trainees. Not only workers but even engineers and technicians take part in directing the school pioneer teams. The pupils are invited to compile a chronicle giving the history of the works komsomol organisation.

Part of the general volume of work carried out by the school in conjunction with the enterprise is the approval by the Methodological Council attached to the Chief Engineer of the working plan for sectors engaged in production teaching; regular discussions with the trainees; getting trainees involved in communal reviews (for instance, a review of safety techniques and labour safeguards in training workshops and in training sectors). Getting the pupils acquainted with the organisation of work and production and also with the work of the various factory services, including such services as VOIR (Works Branch of the All-Union Society of Inventors and Rationalisation Experts), BRIZ (Bureau for Rationalisation and Invention), BTI (Bureau of Technical Information) gives the trainees an opportunity of realising that the activity of a factory collective is extremely many-sided. The involvement by the factory committee of a komsomol and of the local VOIR organisation of senior pupils in rationalisation work (which is inseparably linked up with the development of their creative technical thinking), the creation at the factory 'House of Culture' of a childrens' orchestra of popular instruments, a puppet theatre, ballet dancing and other clubs convinces the trainees that there is always room in the activities of a factory or labour collective for actively displaying the various aspects of a young person's personality.

Unquestionably a conscientious attitude of students to labour is also generated by organizing their educational and productive activities as something that is socially useful. In their work in the educational and production sphere, they perform the duties of social technical controllers, and this makes it possible to combine each pupil's fight for the quality of his output with the organisation of social control over it. The progress and the results of the competitive efforts of the learners are publicised on a special report board in the training section. The students are held responsible to the labour collective for their work. Furthermore, the results of their work are made public and are subject to public evaluation.

A very important (particularly for production work) way of raising the qualifications of workers is technical propaganda. Alongside the young workers and the engineers and technicians; learners are also included in this organisation. The types of this work are extremely varied - surveys and reviews of subjects dealt with in books and magazine articles; show-cases displaying production tests on projects, stories about innovations in technical literature reported on the factory wireless and in the newspaper, show-cases containing periodical articles, etc. All of this develops the students' interest in technical skills.

The leadership exercised by factory workers in general over the young generation generates also new and highly effective forms of educational work, stimulating in them strivings to achieve skills based on demonstrations of mutual help. In point of fact, if the factory newspaper criticises people who adopt a negligent attitude towards study, and if joint meetings of factory and school komsomols are held with discussions of the progress and training results achieved by both parties, and if a decision is taken that komsomol engineers must give assistance to backward pupils, then quite naturally, the pupils will begin to feel that there is common concern felt about how each of them is personally developing.

Young persons are taught to adopt a conscientious attitude to work by participating in the struggle of the workers' collective for the factory's culture. As we all know, technical aesthetics takes a larger and larger part in the daily life of a factory. Social welfare workers act as initiators and leaders in this and their example is followed also by the students. If the labour guilds engaged in basic production move over to manufacturing products free from defects, the trainees too will not stand idly by. They begin to understand that the quality of the product manufactured depends on the quality of their skills.

As a result of the educational work done the trainees come to understand the social content of the personal labour activities of the cadre workers.

2. The other, and in the educational sense, most important aspect of the leadership shown by industrial workers is the broadening of the range of the pedagogical means of exercising influence of young people.

The equipment of teachers is primarily affected by such efficacious (and, in their content, new) pedagogical means as the personal example of the professional worker, which is already positively esteemed by the public; individual leadership; the concrete nature of an outstanding example of production (experience of production innovators); the productive necessity of combining collective and individual action; mutual assistance between comrades in the labour process itself.

The pedagogical value of leadership work with young persons is accentuated by the fact that the participation of production workers in it is important not only quantitatively but, and this is the important point, also qualitatively, for changes are made and improvements achieved in the methods of educational work. In the first place, adult workers begin to adopt a more responsible attitude towards their own actions, since they are all the time under observation by young eyes. In the second place, this personal responsibility of each workman is linked up with his responsibility to the whole labour collective for his work with the younger staff. The education of the younger people who are worthy of the best labour traditions is a matter that effects the honour of the whole factory collective. This explains the warmth of the feelings expressed by the factory specialist workers (cadres) when they talk of the trainees undergoing practical experience in the factory by saying : "This is where the working class is growing up".

The question arises : Why, in circumstances where factory workers exercise leadership over young workers and trainees a positive example has a particularly powerful effect? More than likely it is because they see such examples every day; because it is not something unique; because it concerns the most varied aspects of labour activities; and because it reveals the whole personality of a working man.

In the circumstances of production contacts with workers, collective mutual assistance presents itself to the young people, not merely as a good and desirable evidence of friendship, but as an acute necessity which determines the success of each person's labour and that of the collective as a whole. Such facts are particularly familiar to trainees, as they reveal the great value of mutual assistance in acquiring skills for achieving the best labour results. Take, for example, the trend towards multi-lathe maintenance and the acquisition of several specialist skills, a trend that is widely supported in factories, for it promotes the growth of labour productivity. Such positive examples teach the youngsters to take a conscientious attitude both towards labour and towards acquiring skills which prove to be socially needed.

The attention paid by factory collectives to young people is also valuable in so far as it constitutes an advancement, as between the school and the enterprise, in the content, forms and methods of educational work. Industrial workers themselves emphasise this when they remark that : "One has to "fuss around" with young workers who were schoolboys yesterday, and, as the saying goes, "More than one spoon of salt has to be swallowed before they become people"". One has to teach the youngster to be proud of the traditions of the working class so that he keeps them constantly in remembrance".

An effective method of education also is the individual leadership exercised by the professional (cadre) workers over the young persons. The workers also show themselves deeply interested in those placed under their charge. "Anyone who cherishes the honour and conscience of a Soviet worker, as they say, will not pass by those who have slipped off the path of life, or dropped away from the correct line. And the people who most need support and good advice are the youngsters". Individual leadership enables the teacher to gain a good knowledge of the inward life of adolescents, and in particular, to penetrate to the depths of their psychology.

Collective and individual leadership work is reinforced by new forms of daily contact between the young student and worker and the factory workers, not only at the work-bench, but also in leisure hours and daily life. This involves joint evening meetings for leisure and excursions (to the Polytechnical Museum, to the Exhibition of Agricultural Achievements, to the Exhibition of Labour Protection and Safety Techniques), to concerts and performances by trainees in the workshops and over the factory wireless network, etc. Daily contact of this type enables the youngsters to see people from different sides and in different situations.

In other words, the factory collective helps the young trainees to obtain personal experience of life and labour in socially useful activities "alongside workers and peasants", the pedagogical aspect of which was rightly emphasised by Vladimir Ilyich Lenin.

3. The pedagogical value of the leadership work done by factory collectives lies in the fact that wider possibilities are opened up for guiding the education of young people. It becomes organised and systematised. Life too has suggested new and effective organisational forms for such guidance.

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Social councils of youth teachers are established in factories. These councils are elected in workshops and at general assemblies. They comprise qualified workers, engineers, foremen, representatives of komsomol organisations. Members of the Council meet the new members, familiarize them with the enterprise, tell them about distinguished people in the factory. They are admitted to the collective in ceremonial fashion at a general assembly, and are then attached to an experienced fitter or turner. The workmen help the young man to gain a knowledge of his trade, teach him how to behave properly in social places, to make a sensible allocation of his wages and instil in him a taste for literature and art.

The high technical level of labour training given to trainees is backed by the Methodological Council under the Chairmanship of the Chief Engineer. As a general rule, its members include prominent specialists: the principal engineer, the head technologist, the head of the technical training department, heads of guilds, factory foremen and school-teachers. The executive organ of the Council is the factory department for technical instruction. The Council decides problems both of an organisational and systematic training character. It organises transmissions over the factory radio network, dealing with the content of the training given to apprentices. The agenda of meetings of the Methodological Council contains, for example, such items as the selection and discussion of targets set for practical work, and the training programme, the results of the half-year's work in the teaching section, and targets for the second half-year; the state of the educational work done with trainees; the connection of labour and production training with the principles of science (on testing and checking materials).

All the "guiding reins" are brought into operation for organisationally influencing the young people, and accordingly, the most widely varying forms of management are applied. For instance, the trade union guild committees bring up for discussion at workers' meetings, the problems of educating young persons, and in conjunction with teachers' collectives, consider problems of labour training; they hold special (guild and general factory) conferences, devoted to the problem of "How to educate the learners".

A great deal of work is done by the juvenile committees of the factory's trade union committee in conjunction with the children's departments of the factories' House of Culture, and the school, in order to attract the students into various circles and clubs (for example, the "Red Tie Club" for students in classes V - VII, and "Youth Club" for senior classes). The clubs hold evening meetings, for instance, on such subjects as "Who am I to be?", "The paths of the fathers are the roads for the children", "Contemporary Soviet Poetry", and other subjects.

Systematically, and principally in the form of concrete communal supervision, all the work of the school and community is carried out in conjunction with the family and the parents of the students. Parents' committees for a school and classes in some small areas consist basically of the workers of the leading or basic enterprise. Accordingly they can act as excellent intermediaries between a factory and a school (for example, members of the committee of a trade union factory committee and a parents' committee visit the homes of trainees who are making poor progress or exhibiting bad behaviour and after ascertaining the causes, will take steps to eradicate them). Exchange of experience in educational work in the family is conducted by women's councils of guilds and departments which have school sectors attached to them. They organise special "pupil's voice" corners, with showcases displaying photographs of distinguished pupils etc. Many activist parents become members of the Council for assistance to family and school, and of the women's council. They help to organise the class leadership of guilds and departments. At guild meetings those workers whose children are poor learners at school and who take no interest in their progress, are discussed and criticised. A check is made of the work done by guilds with learners (exhibits in the educational section of up-to-date labour methods, entry on the roll of honour of the names of distinguished workers in labour training etc.). In their turn, once a month, (on a fixed day) schools hold talks in the instructional guild with parents of students who are making no progress or who commit breaches of discipline. In other words, the responsibility of parents for the education of children becomes a subject of discussion and is, at the same time, organically linked up with all their daily productive activity.

Factory komsonol committees select their best komsomols to act as pioneer leaders for detachments and as organisers of youth camps for labour and leisure. The friendship between factory and school komsomols takes the form of joint tourist excursions, planting parks of rest, and helping a patronised State Farm in harvesting the crop.

In these circumstances, the work of a class leader or teacher too is given a new content. He must be in constant touch both with the workers' collective as a whole and with each of its members. He can exert an active influence on their education work with pupils.

Another aspect, valuable in the direction of educational work, is the possibility of exerting organised influence over the worker-teachers themselves, using every opportunity of influencing them in the general working system of a factory collective. In the first place, this raises the level of their pedagogical skills and secondly, enables them to exercise regular methodical control over them as teachers, discharging the task of giving young learners labour instruction. For these purposes the school holds seminars (both in school workshops and in a factory department) for discussing effective methods of conducting theoretical studies; the activisation and methods of assessing the skills of the pupils; materials for communicating the labour experience of the best foremen or teachers; the labour content of schools which have up-to-date knowledge of labour instruction and education, and also open lessons and the results of the reciprocal attendance at the lessons given by teachers of polytechnical courses and foremen in factory instruction.

It is a characteristic feature of the practice of educational work with young persons that the collaboration of school and factory helps to improve the methodological skills of foremen and teachers and of officers engaged in the teaching of engineering. Workers who act as instructors of trainees, begin to have a deeper understanding so as to instil into the trainee a love for the trade andrespect for work, and train him in progressive methods of work; they themselves must possess the necessary skills and high moral qualities so as to set an example to the learners. With this in view, the factory collective selects for instructional work the best production workers, while the school in its turn gives them systematic assistance on problems connected with the system of training and education and with preparation for lessons. They are given an opportunity to sit in on lessons given by the most experienced teachers. After such sessions an analysis is made of the lessons. Foremen are included as members of the polytechnical committee of the school and take a regular part in the work of the Pedagogical Council. For example, experienced school teachers give them lessons on "How to prepare for lessons and give them"; "The dialectical requirements for giving a lesson". Open lessons are given also by the best 'system' engineers. Seminars are held with teachers of labour and production training. To this end, schools possessing up-to-date experience of labour training and education are created. Lecture sessions are organised in which much attention is devoted to studying the pedagogical legacy of N.K. Krupskaya, A.S. Makarenko, and other progressive pedagogues. All this work is, as a rule, directed by the School Pedagogical Council.

In a number of cases, direction of the educational work done with pupils is organisationally reinforced by the mutual obligations existing between the school community and the enterprise.

Competition is practised between workers and pupils to participate in work on social principles. The obligations undertaken by workers specify the particular executives and the time limits fixed for such important measures as improving the equipment of a school and of workshops and departments giving production training; visual propaganda and the formulation of the results of the emulation practised in school and factory; daily supervision of the labour discipline of learners; their cultural or leisure occupations; work with the pupil members of overtime groups, etc. Trainees undertake the duties of leadership of factory kindergartens and crèches; the organisation in the factory guilds of a 'stand' called "Outstanding Instructors"; extending assistance to factory workers in gathering in the harvest on a patronized State Farm etc. The trade-union factory committee, in conjunction with the directions and the community served by the school, discuss them at their meetings and keep a constant check on their discharge.

As a result of this deliberately directed and organised educational work, young people begin to understand that the creation of material values is the result of the combined efforts of the whole labour collective and that a conscientious attitude to labour demonstrates the high moral qualities of the workers. It is no mere accident therefore, that many of them refer in extremely warm terms to the factory and the foremen who taught them to love and respect work and working people. In their essays, they write "It is a pleasure to feel that in all the corners of our country and beyond its borders where people have the products of our factory, there is some small portion of your labour too .. we found in the factory the practical application of what we were taught in school". "We pass on our team to the tenth-class students and would like them to love the factory as we have loved it. Cherish the honour of the school! Be proud of the title of Worker!"

General Conclusion:

When a school has connections with a factory, the factory community helps the pupils to understand the place of labour in the life of the community and creates conditions for satisfying their interests, thus broadening the possibilities for a versatile development of their abilities. Hence the attention given by factory collectives to the young learners, constitutes an effective pedagogical factor in training them for life and for labour in present-day production.

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Pre-vocational Training, Education and Vocational Orientation within and outside Schools

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THE TRAINING AND IMPROVEMENT OF THE QUALIFICATIONS OF TEACHERS OF WORKERS' EDUCATION

BY

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Popular education in the USSR is being developed by means of the systematic expansion of the network of secondary general educational schools, increasing the number of "vocational-technical schools which provide a general educational training in the context of secondary schooling and expanding the network of 'technicums", schools and other secondary and higher special educational establishments.

The training and improvement of the qualifications of teachers for each of the above groups of teaching institutions is, naturally, conducted in different ways. It is my purpose in this report to consider this problem in its relationship to the secondary school for general education.

In the general educational school lessons in workers' (labour) instruction are introduced from the first class onwards. To this end teachers in the primary classes, while they are being trained in teacher-training schools and in pedagogical institutes specializing in the pedagogy and methodology of primary education are given the appropriate instruction in workers' (labour) education. In classes IV-VIII lessons in labour training and polytechnical practical courses in classes IX-X are given by specialists - labour (workers') teachers who have been trained in the faculties and departments of pedagogical institutes. In the case of technical labour they are given in faculties of industrial pedagogy, in the case of agricultural labour - in agro-biological faculties and in the case of servicing activities in faculties for artistic and graphic studies. In some of the Union Republics (e.g. the Ukraine and Byelorussia) such specialists are trained partly in pedagogical (teacher training) schools and technical colleges.

The aim of the professional activity of teachers of labour instruction is: to cultivate in the pupils a conscientious attitude towards work and general labour culture, to develop in them an elementary range of the skills necessary in life and the abilities requisite in the field of technical, agricultural and servicing or maintenance work: the development of technical thinking, of the rationalizing and constructional capacities of the students. the ability to apply the skilled knowledge accumulated to specific branches of labour; to acquaint the students with the principles of engineering, technology and the organization of production and with the widest range of occupations or vocations.

The outlined typed of training given to teachers is determined so as to comply with the above indicated aims, objectives and content of labour (workers') education as laid down in school curricula or syllabuses.

Pedagogical (teacher-training) institutes are now carrying out the training of labour (worker) teachers along several types or models. In the industrial-pedagogical (teacher-training) faculties specialists are being trained in: labour education and physics, labour education and drawing and also labour (workers') education and the principles of the mechanization of agriculture. In agro-biological departments teachers are being trained in biology, the principles of agronomy and agricultural labour and in the artistic graphics faculties teachers of drawing and servicing or maintenance work.

The content of the training given to the specialists in question is defined by the teaching programmes (syllabuses) in the specialised subjects concerned and by the programmes (syllabuses) of the study courses in each special discipline. At the present time a great deal of work is being done in improving the study plans and programmes for pedagogical (teacher training) institutes in the basic special disciplines.

Labour education in our general educational schools has in recent years undergone changes in the forms and methods of its operation. There have been changes also in organizational forms and also in the content (subject matter) of training teachers for it.

In our country the training of labour teachers has been going on since the second half of the last century. In the pre-revolutionary era, however, the training was given principally by private teaching establishments or institutions and was not very widespread. Immediately after the triumph of the Great October Revolution there was introduced in the institutes of popular education set up in 1919 an outline of a scheme for training instructors in labour education. Then in the 1920's the training of teachers was conducted in teacher-training institutes in the physics and technical departments which had a technical and agricultural bias. In the beginning of the 30's of the present century the training of labour teachers for higher-grade schools was carried on in industrial-pedagogical institutes and in the case of village schools in agro-pedagogical institutes. This training was basically directed rather towards the vocational education of school-age youths. Subsequently, it acquired a strictly vocational orientation and so it was difficult for specialists with a narrow range of training to conduct labour teaching in a school of general education. Consequnetly, this experience has shown that it was more expedient to train teachers for labour teaching for a secondary school of general education, on broader lines than in the case of occupational or vocational instruction.

In the last decade quite a few teachers of technical work have been trained in the various Union Republics of our country. In future, the intention is to train teachers for workers' education on a wider scale. For this purpose the U.S.S.R. disposes of great possibilities. We have 205 teacher-training institutes and 411 teacher-training schools. In some of them teachers in labour education are already being trained, while in others new departments and faculties have been introduced for this purpose.

Side by side with the expansion of the scope of the training of teachers in the subject of labour education, there has been, as we have already pointed out above, an improvement made in its content, new types of training are being more exactly defined and elaborated, as well as the qualificational requirements for this category of specialists.

In the new teaching syllabuses for teacher-training institutes it is proposed to introduce such study subjects as wireless engineering and the principles of technical and artistic designing. In industrial-pedagogical faculties it is planned to increase the number of hours allocated to teaching drawing, physics and the mechanisation of agriculture and to specialized training for instructors in agricultural work. This will help to improve the professional qualifications of teachers, taking

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into account the contemporary demands for work instruction, as laid down by the new school syllabuses, and giving them the training requisite for the new type of school.

Disciplines in the special range are being expanded also in the teaching syllabuses of teacher-training schools engaged in training teachers for giving labour education by introducing new teaching subjects which enable them to conduct training on broader lines than formerly.

The stronger emphasis laid upon the specialization of teachers of labour education in pedagogical (teacher-training) institutes and schools is aimed at ensuring that workers' education should become the basic distinctive specialization instead of, as formerly, physics (biology or object lessons). The re-orientation of the training of teachers in work instruction should have a positive influence on reinforcing the polytechnical bias in the general, over-all training of this type of broad-based specialist. And it will naturally stimulate the fuller utilization of young specialists on their appointment.

In these circumstances there will be a sharp decline in the need for staffing schools of general education with labour-education personnel at the cost of (reducing the numbers of) specialists in domestic economy and practical teachers who require supplementary re-training. From the schematic standpoint it can be presented in the following form. In the Ministry of Education of the R.S.F.S.R. there operates a Central Institute for improving the qualifications of teachers which comprises a methodolocal section (Kabinet) on labour education. It exerts methodological supervision over the re-training, and raising the qualifications, of teachers of labour education in general in the schools of Russia. In a number of Union Republics territorial institutes for improving the standards of teachers have been organized by Ministries of Education (national education). In the larger Republics such institutes exist in the provincial (regional) departments of public education and include sections (Kabinet) for workers' (labour) education. In the case of regional departments of national education there are methodological offices (Kabinet) which comprise sections established for labour education and in the schools there operate school or inter-school(for several neighbouring schools) methodological associations of teachers engaged in work instruction.

The re-training and the raising of the qualifications of teachers of labour education take the following forms:

a) systems of short-term courses conducted on the basis of the regional methodological centres and the workers' educational centres of institutes for improving the qualifications of teachers or else in the special faculties (departments) of pedagogical institutes;

b) long-term (one or two year) seminars conducted on similar lines as in the previous case (on an 'auditory' or correspondence-course system);

c) the discussion in regional (urban) sections, in school and inter-school associations of methodological problems of a practical nature connected with giving lessons in separate departments of labour education. For instance, the highest trained teachers and methodologists will give 'open' demonstration lessons in complicated or new subjects and the teachers in attendance will discuss them in detail.

In the teaching programmes (syllabuses) of annual seminars the principal attention will be paid to studying the content, organization and methodology of labour education, including the methodology of conducting classes and also on the scientific and technical training of teachers, their knowledge of the problems of labour protection and safety techniques. In the seminar studies dealing with particular types of practical training-schools, attention is paid mainly to studying methods for conducting lessons. In the case of short-term courses on individual problems of labour education the participants study all the programme problems connected with the teaching of a given subject or a section of the problem.

The methodologists and other employees of institutes for raising the standard of teachers, methodological laboratories, and associations operate oral and written consultations for teachers and students on problems of labour education, organize and take part in the holding of pedagogical lectures, teachers' conferences, congresses and meetings, communicate advanced pedagogical experience and supply teachers of labour education with various forms of operational assistance.

Teachers of labour education obtain a large amount and, what is more important, systematic methodological assistance from the periodical "School and Production", published by the U.S.S.R. Ministry of Education. The periodical supplies systematic information on the experimental work done by labour teachers in a special section entitled "The Enthusiasts of Labour Education" and scientific-methodological material is constantly being published in the section entitled "Training of Teaching Staff".

In the general State context the training and re-training of teachers for labour and vocational education, like the whole system of public education, is planned and carried into effect by the U.S.S.R. Ministry of Education, the U.S.S.R. Ministry of Higher and Secondary Special Education, in conjunction with the other branch ministries, State committees, the U.S.S.R. Academy of Sciences, the U.S.S.R. and the Union Republics' State Plan under the direction of the C.P.S.U. Central Committee and the Soviet Government.

The further extension and improvement of the content, forms and methods for training labour teachers is conducted on the following lines:

1. Increasing the amount of the training given to teachers of labour education in the teacher-training educational institutions of the Union Republics.
2. More closely defining the forms or outlines of the training given to teachers of labour education and framing for them the qualitative features of the various faculties of teacher-training institutes with the object of improving the quality of the specialists who graduate from them.
3. Drawing up an optimum, scientifically-based structure of teaching syllabuses for pedagogical institutes in all the special subjects needed by teachers of technical, agricultural and general servicing (maintenance) subjects, so as to ensure the improvement of their theoretical and practical training.
4. Defining more closely the content and methodology of the teaching of the basic study disciplines of specialised and pedagogical study groups, making allowance for the demands for labour education, as set forth in the new programmes, in such a way as to reinforce the polytechnical training of future specialists.
5. Conducting systematic research in the framework of the U.S.S.R. Academcy of Pedagogical Sciences, jointly with the Pedagogical Institutes of the Republics on the problem "Scientific Bases for Improving the Content of Training, and Bettering the Qualifications of Labour Teachers".

General conclusion

The wide association of members of the scientific and pedagogical community in the further improvement of higher and secondary pedagogical education in labour teaching helps considerably to improve the whole system of training and raising the qualifications of teachers of labour education.

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WORKING PAPER

ON

TRAINING STUDENTS IN THE PROCEDURES OF POLYTECHNICAL LABOUR INSTRUCTION IN RURAL SCHOOLS

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Specially important significance is attached in our school system to polytechnical instruction.

V. I. Lenin attached great value to the polytechnical education and upbringing of all children up to seventeen years of age, not only as a requirement for the over-all development of culture and progress but also as a means of industrialising the country. He used to say that a poorly educated man, more especially in the technical sense, cannot acquire, for instance, the requisite knowledge of science and engineering such as electricity. Accordingly, at all levels of instruction, V. I. Lenin insisted on pupils or students acquiring a knowledge of electricity and its application in industry, agriculture and daily life. In the light of the numerous and insistent directions given by V. I. Lenin about the compulsory introduction of polytechnical education, it is important to emphasise the fact that it conforms with the general aim of schools of general education - the over-all development of its pupils. Furthermore, in defining the place and the importance of polytechnical instruction in solving the general objectives of schooling, we must bear in mind three aspects of this instruction. Firstly, the enrichment in knowledge of the students and the development of their capacity to absorb knowledge; secondly, the inculcation in students in the process of labour operations of the organisational abilities, and habits of social behaviou as members of a labour collective; thirdly, the technical education of students to the extent appropriate to their age and their intellectual and physical development.

In the course of the development of production, science and culture, changes have occurred in the concrete content and in the forms and methods of polytechnical education, but its objective - familiarising the students in theory and practice, with the main branches of production and combining their instruction with socially-productive labour - remains unchanged.

What is this objective? Polytechnical instruction in a present-day school solves the problem of shaping a human being, whose basic social function is labour activity, primarily in the production of materials.

The training of an individual in the labour process proceeds in three directions. In the labour process the individual finds himself in specific relationships to nature, as the basic source of the necessary materials. The utilisation of natural materials must be sensible and calculated not only for a particular moment, but also for the long-term and for the future. Hence there arises in its full extent the pedagogical objective of inculcating in children from their early years an economical attitude towards the riches of nature. In the labour process the individual is included in the process of production. This evokes the inevitable pedagogical objective of training the up-and-coming generations for qualified production work. The participation of each individual in labour activity brings him into specific relationships with other workers, with the labour collective and with society in general, and this conditions the pedagogical objective of the social and civilian education of the adolescent generations.

Technical progress and the plans for the social development of town and country, as elaborated in our country, call for a comprehensive system of polytechnical education and instruction in the school which is directing pupils into labour work. This system comprises polytechnical education in the process of teaching the principles of science, labour education and instruction, occupational or vocational guidance and adaptability, and, wherever possible, production instruction on a polytechnical basis, which will prepare those finishing secondary schooling for qualified labour in working occupations or vocations to start with, in branches of industrial and agricultural production and also in the sphere of servicing (maintenance jobs).

In the work of schools polytechnical work training is closely linked up into a single whole with education. When we talk about instruction we have in mind enriching a man's consciousness with a knowledge of the facts, phenomena and laws acquired by science regarding nature and human society, and also equipping the person with the skills and techniques he needs for socially useful work. When, on the other hand we talk about education, we have in mind the formation of an individual as a convinced and active builder of society. While realising the difference in content between these two educational tenets - education and instruction - we are fully conscious of the close link between them and of their unity in the over-all educational process. The distinction between them, however, is important in order to have a clearer realisation of the ways and means both of instruction and education, and also of the possible links between one and the other. The links in content between instruction and education in the deliberately controlled formation of the conscience and moral image of a workman can be presented in the form of the following logical model:

Knowledge of the scientific bases of socially useful labour The application of knowledge in work practice	Emotions arising in the process and the result of labour activity	Moral training as expressed in the need for working as the result of labour experience and a conscientious attitude to social work	Béhaviour in the form of active work and creative qualified work for the benefit of society

The scientific basis of agricultural production consists of natural science and mathematical knowledge - physics, chemistry, biology, mathematics. The educational function of teaching biology in school lies in the fact that the discovery of the links between biological knowledge and agronomy constitutes the scientific basis for enabling pupils to understand the advantages of the intensive operation of agriculture.

A study of natural science and lessons in labour enable the pupils to obtain an idea about the manifestation of the laws of natural development. Thus, by getting students to understand the various agro-technical methods for looking after plants in their causal investigative connection with biological peculiarities, the development of their creative thinking, their endeavours to see the cause behind each phenomenon, and to discern behind each cause the result to which it will lead will be encouraged. The large amount of factual material in natural science, the independent ascertainment of these facts by the students in the work process will enable them to see with their own eyes how an individual, after acquiring a knowledge of the norms governing the development of growing organisms, utilizes them in his practical work. After studying the biology of the growth of plants and their dependence on the conditions of their outer environment, students will learn the possibilities of regulating the growth and development of plants by man through changing the conditions of their cultivation. As an example of this, we may utilise the pricking-out method of cultivating vegetable crops, the vegetative period of which makes it impossible to grow them in the open, the various methods of hardening young plants and other agricultural techniques. While studying the pests and diseases that affect vegetable and fruit crops, the students will observe the biological phases of their development cycle, will diagnose cases of the intensive spread of diseases and harmful pests where conditions favour their development and multiplication. Ascertaining the reasons for an undesirable phenomenon will enable the students themselves to take steps for its elimination and for undertaking prophylactic measures to present the emergence of conditions that will favour the intensive development and the multiplication of particular diseases and harmful pests. By studying individual plants the students will discover the deep-rooted connections between an organism and the conditions under which it exists, will obtain an explanation for every feature in the structure and variations of an organism that is historically so composed as to adapt itself to specific conditions of existence.

Knowledge of the physiology of the root growth of a plant, the functions of the microflora of the surrounding root area for supplying plants with nourishing foodstuffs, the significance of favourable air and water conditions in the soil, obtained by growing food crops, applying fertilisers, especially organic or organic-mineral mixtures - all of this makes it possible to understand the scientific bases for resistant crops and a proper super-productive utilisation of the soil.

The teaching of physics and chemistry, closely linked as it is by content and also by the methods of instruction, with agriculture, plays an enormous part in inculcating pupils with an interest in this branch of production. The manufacture of various implements and mechanical appliances of working models and of the remote-controlled installations used in agriculture and the active association in such work of the students constitute an absorbing attraction for them. Work of this kind helps to produce in students efforts and abilities for acquiring a knowledge of advanced contemp rary techniques based on a knowledge of mechanics, electro-technology and electronics. In their turn, the students begin to evince a genuine interest in science. The teaching of chemistry effectively inculcates an interest in agriculture by organising agro-chemical experiments and tests in schools.

In the system of work training in a secondary rural school the requisite demands for work are laid down to conform with the objectives of

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polytechnical education. The first such demand consists in the socially-useful value of labour, as expressed in the clear and intelligible guidance given to the pupils themselves. Country schoolchildren actively seek for new methods of increasing harvests, organise tests, keep a close eye on the growth of plants and enrich their labour experience with the knowledge required. This constitutes the basic concept of combining labour with the instruction which generates a new social consciousness in the agricultural worker. This is the general direction of educational work instruction in a rural school.

The other highly important task of our school which is very closely linked up with teaching is the education of the growing generation in the spirit of a conscientious and creative attitude towards labour. Conscientious - in the sense of adopting an active attitude towards labour when the pupil begins independently to apply theoretical knowledge to the practical solution of problems and to find his bearings in new circumstances. Work of this kind presumes a recognition of the conditions, of the ways and means of performing labour jobs, comparing the results with the target that had to be achieved and knowing how to foresee the possible consequences and, in event of the results obtained not matching up to the conditions of the problem to be solved, knowing how to find and eliminate the mistake committed.

The most important condition for teaching pupils to realise the requirements involved in conscientious creative labour consists in activating the work of the mind in the process of instruction, inculcating the capacity for finding problems facing them and find answers to them. At the same time the raising and the solving of such problems presupposes the ability of the students to analyse facts and phenomena, to dinstinguish which is important from what is secondary, to discern the relationship between them and their influence one upon the other, to foresee the consequence of particular causes so that, in solving the problem they can pinpoint the possible results. It is, therefore, desirable that pupils while acquiring a specific amount of knowledge and skills, should study conscientiously and adopt a creative attitude to their educational work.

However one can only train an individual successfully if he wants to learn and has an interest in learning. On the other hand, interest also does not emerge in isolation. It is aroused and is developed in the process of active work - in the given case in the process of educational work activity. In this direction a certain function is performed by acquainting the students with the nature of the work done by representatives of individual occupations in various spheres of activity. To this end pupils are familiarised with the basic branches and the different agricultural vocations or occupations followed in local centres of production; they are given wider pratical opportunities of educational visits to the leading collective farms and State farms in the regional and province, and to the agricultural scientific research establishments and agricultural higher educational institutes (higher educational institutions). The purpose of such visits is:

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- to show the pupils agricultural occupations or vocations in all their varied forms and evoke an interest in them;
- to demonstrate the creative character of agricultural work;
- to convey to the pupils the idea that the path towards creative work (whether in production or in scientific research establishment) lies in the serious, profound work done on improving their knowledge.

Great importance in cultivating a conscientious attitude towards agricultural work lies in the lessons, including practical laboratory tasks, which give the pupils an opportunity of applying their knowledge in practice, testing themselves and acquiring new skills and knowledge. For instance, tasks involving the independent herbavisation of plants, studying the surface and root systems of fruit and berry plants, observation of the phenological development of organisms, recognition of varieties, comparative descriptions of particular plant organs, recognition of plants by their shoots, determination of the damage done by diseases and harmful pests, determination of the growth qualities of seeds and the conduct of various field analyses.

Thus even while studying theoretical problems, the students can be inculcated with conscientious attitude towards work, can be equipped with knowledge of those principles on which are founded the methods adopted by agricultural technicians in growing plants and success can be achieved in giving the students a thorough understanding of the technological bases of agricultural production.

However, the greatest educational effect is achieved only when practice comes to the aid of theory and when a conscientious attitude to work is developed and, if one may say so, it is directly sharpened in the process of agricultural work.

One of the characteristic peculiarities of present-day agricultural work is that it becomes every day richer in its intellectual content. The performance of heavy physical work is being gradually transferred to the machine, and in the work done by outstanding agriculturalists which constitute an example for work, more and more importance is being attached to such functions as the selection of the essential activities, the planning of their optimum systematisation, the supervision of work, the regulation of the work system, etc. In the case of outstanding workers in agricultural production, a characteristic feature is also their efforts to improve continuously the work process and introduce into it creative elements. The organisation of instruction in rural schools takes account of these special features of work at the present time. It is impossible to train students for such work by merely giving them a mechanical training in performing labour operations and techniques. The instruction given in school must accustom the students to think out how work should be performed and develop their technical thinking and their creative abilities.

The practical labour instruction of senior students must include the basic elements in the scientific organisation of work:

- acquiring a command of methods for planning the production process (familiarisation with the task to be performed, selecting the suitable materials, the technical appliances, the technological procedures and the labour operations, making the necessary calculations and determining the rational way for performance of a task);
- acquiring the skills and the techniques for preparing the work site, the necessary materials and the tools needed for work;
- acquiring the skills and the techniques needed for performing a production process;
- acquiring the skills and techniques of supervising and regulating a production process;
- acquiring the techniques for the organisation of the work process in a 'collective'.

As experience has shown, the influence of planning instruction on the quality of the work of the pupils is quite great.

It is specially valuable to give pupils training in the techniques of auto-control. For this purpose the pupil is asked to detect his own mistakes himself and their causes: The teacher demonstrates methods for correcting different kinds of mistakes and requires the students to regulate and correct their actions on their own initiative before applying to him for advice. Regulation of the students' work and correction of the defects and infringements of the work process which have been discovered (correction of work) constitute one proof of the realisation of their performance.

So far we have been discussing the relationships between instruction and educution in the process of acquiring and strengthening the pupils' knowledge of the scientific bases of agricultural work. The most important aspect of the formation of a new man from the rising generations consists in inculcating a sense of the moral value involved in the work process, inculcating the need to work not only in one's personal interests but also in the interests of society.

As in the case of every rationally determined educational process, nurturing a conscientious attitude towards work is an all-inclusive process. Its purpose is the formation of a widely developed and morally upright personality which is guided in its behaviour and actions by the rules of the moral code of Communism. The ways of imparting such education vary, but in the centre of the many sided processes of education there stands productive work combined with instruction.

While we recognise the great educational power of work, we must at the same time clearly understand that work affects the shaping of the individual not in isolation or separately, and not independently of other factors, but conjointly with them in one signle front. This is one aspect. The other aspect consists in the fact that work influences the education not of any one quality of the individual, not selectively, but operates comprehensively, simultaneously on all the aspects of the personality. Here, as in comprehensive education in general, the pedagogical law about the mutual inter-action of all factors, singly and jointly, comes into operation. To clarify the problem of giving students, especially those of older age, fuller and clearer enlightenment in undertaking socially useful work, it is necessary to distinguish separate aspects of the complicated process of labour education.

This concerns, on the one hand, the moral, social and psychological preparation of students for work (vocational guidance, developing an interest in work and a creative sense of initiative towards it, inculcating recognition of the person's obligation and sense of responsibility and discipline in work and also of the value of collectivism in work, bringing out the necessary skill to combine personal with community problems, etc.); on the other hand, the technical and physical training (inculcation of business-like methods, managerial techniques and the ability speedily to size up a labour situation, the development of strength, dexterity, endurance, efficiency and labour know-how).

All these aspects of work education will be realised if labour instruction is properly organised. Practical experience in training for socially useful work opens up the richest possibilities in the moral education of the pupils.

Work for the general benefit or advantage is given social recognition and approval when it is highly productive. The whole of society and each of its members are interested in this quality of work. This is why it is completely natural for every member of society to strive to acquire qualitative types and techniques of work corresponding to the powers, abilities and interests of each individual. Manifestation of the abilities and interests of children and young persons and manifestation of their powers and potentials determining the future labour activity of each of them, will be given effect to in the process of inculcating a creative attitude to work.

Nevertheless, success in inculcating creative ability and initiative depends on several factors, and, primarily, on the existence of the necessary knowledge and skills to master qualified work and the existence of businesslike and moral qualities in the individual. This is why the inculcation of a creative attitude to work during the training process means that the pupils will gain a command of the methods of the rational, i.e. scientifically based organisation of work, which increases its productivity, the ability to plan their work so as to fit in with the general plan of production as a whole, and a particular sector of such production, knowledge of labour norms and the ability to utilise them both for auto-control and for determining and raising the level of work output, i.e. in the final upshot, for increasing work productivity. Of course, imparting a creative attitude to work includes educating the students in endeavours directed towards experimental and technically creative inventiveness. However, success in this matter can be ensured only where the pupils are being simultaneously trained in all their work problems, however, they may differ in value, to exactitude and accuracy in their work, and to a rational organisation of their own job and to an economic utilisation of their powers, to developing work know-how, and a careful utilisation of materials and efficient utilisation of work appliances.

All these qualities characterise the fairly high level of a worker's ability, his purposefulness and his persistent endeavours to achieve a solution of the task set him by overcoming any difficulties encountered therein. Of course, the inculcation of these business-like qualities in our society goes hand in hand with the development of a lofty recognition of a feeling of duty and the efforts made to take an active part in the building of Communism.

General conclusion

In the process of polytechnical instruction and the theoretical and practical study of agricultural problems, specific materialistic ideas, concepts and generalities will develop among the pupils. They become convinced of the possibility of utilising the humanly recognised norms for the development of organisms for the purpose of creatively changing their nature of creating the optimum conditions that will satisfy their needs for achieving the maximum results possible at a given stage in the development of agricultural science.

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THE PERSONALITY OF THE PUPIL

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Over a century ago the celebrated psychologist and educationist, K. D. Usinskij, wrote that the education of man, in its broadest possible sense - the aim of educational science - calls first of all for a knowledge and understanding of man, equally in the broadest sense. Every teacher knows how some pupils will immediately grasp whatever they may be told while others have to have it repeated many times before they understand. Some pupils acquire new skills and abilities quickly while for others every new task is a source of confusion and nervous tension.

The more a teacher studies and understands his pupil, or, in other words, the more precise his appraisal of the pupil's character, the more effective his educational work with that pupil will be. Obviously this calls for not only knowledge of psychology on the part of the teacher but also considerable teaching skill, skill such as is acquired through years of experience. That does not mean, however, that the ability to draw up an appraisal of personal characteristics cannot be formally acquired, that there is no set system of ideas which, once learned, will facilitate this difficult but essential task.

A character appraisal may be written or oral, and the personality pattern of an individual will reflect not only what is said or written on that individual but also (and above all) the store of knowledge and understanding on the subject possessed by the person making it. There may be a gap between what is known and what is written. It is possible to know a subject well and write about it badly. It is also possible to write well and coherently while distorting the facts. Something that can never happen, however, is the production of an adequate character appraisal for a personality that has not been carefully studied. The ability to draw up a personality pattern of a human being depends on the ability to study it. These two abilities are quite distinct, for the study of the pupil does not come to its logical conclusion with the preparation of the appraisal, but in fact becomes at once the driving force in the educational influence to be brought to bear on the pupil, while the personality pattern established by an educationist for the pupil must give the next group of teachers the basic data for commencing their study of the pupil's personality (e.g. when the pupil goes up into the next class or to another school).

A personality pattern has many aspects.

If drawn up in detail, this detail varies in degree. It may often be easier to write a long and detailed appraisal than one which is brief but sufficiently complete to bring out the pupil's essential personal characteristics. A distinction must be made between a detailed and a comprehensive appraisal. The latter means that the pupil's personality is considered from many different angles, not from one single point of view (i.e. an appraisal for a clearly specified purpose). An appraisal is said to be in depth when it covers the pupil's essential characteristics, including those which may not always be obvious at first and which it may not always be easy to demonstrate. The converse is a superficial appraisal, where the most obvious characteristics - the traits - are deemed to be the essential ones. It follows from all this that if the objective is to prepare a brief appraisal, it will still be necessary to study the pupil's personality in all its aspects, so that no essential component of the personality (or characteristic) passes unperceived and also so that what is secondary will not be substituted for the essential.

It goes without saying, however, that the principal qualities of a good appraisal are the accuracy and objectivity of its contents, that is, whether they are in line with the genuine characteristics of the personality in question. An appraisal may be inexact for a great variety of reasons, but the most frequent reason is likely to be its subjectivity, when the teacher's personal opinion - often enough unfounded - will nevertheless be regarded as objective and based upon fact. This paper is concerned only with reliable character appraisals based on objective judgement.

Reference should also be made to one of the most important qualities in a good character appraisal, a quality which is often forgotten: it should not simply voice comments or opinions but should be "active". This means that it should include conclusions on the measures which should be taken to shape the pupil's personality or character.

It is necessary to stress here that the study of the pupil, and especially the preparation of his character appraisal, is not an end in itself but only the means to ensure "personalism", an individual, personal approach towards the education of each individual person. Neither education in the broad sense nor the narrower concept of teaching and instruction can be effectively pursued unless based on thorough, comprehensive and objective study of the personality of the pupils.

In what does this concept of personality consist? The following, we believe, is the most comprehensive definition: a man's personality is the sum total of his emotional reactions, attitudes, and knowledge of and active response to his environment, But as emotions, attitudes, knowledge and response are matters of consciousness, it follows that a highly concise but still complete definition would be: personality is the conscious self.

Any character appraisal intended for the use of a teacher should therefore cover the individual peculiarities of the pupil's conscious self, or personality, bearing in mind that consciousness or awareness is the subjective aspect of the individual's mentality, liable to modification in the course of his relations with others and, in particular, in the course of his education and upbringing. This explains why man is not born with a personality but acquires one.

Studying the pupil as a person means studying his mental characteristics or - what comes to the same thing - studying the outward signs of his consciousness. Not all the manifestations of an individual's mentality are properties of his consciousness, however: the psychic phenomena of the individual can be arbitrarily - but sufficiently accurately - divided into three categories:

Category 1: mental processes, usually of short duration and following in rapid succession;

Category 2: mental states, more stable and longer lasting;

Category 3: personal characteristics (it is not necessary here to specify "mental", in view of the definition of personality), longer lasting and more stable still, but not immutable.

The personal characteristics of an individual are numerous and varied; it would be very difficult to analyse them if the personality were devoid of psychological structure. According to modern science a structure is a whole comprising both the elements of which it is made up and the relations formed between the elements themselves and between the elements and the whole. Applied to the study of the personality, the "whole" represents the personality, and the component elements are the "personal characteristics". The inter-relation of these elements can be observed in the links between the various characteristics, in the influence of the whole personality on each component element and the influence of the various distinct characteristics on the whole - the complete personality. Personality components are not material phenomena like the cells of the brain, for example, or the parts of a machine, but functional phenomena. We may therefore speak of the "functional structure of the personality". Since the component elements(and the relations between them and with the personality as a whole) are susceptible to change, the most satisfactory expression of the concept would be "functional and dynamic structure of the personality".

Interpreting the functional and dynamic structure of the personality in this way makes it much easier to study the personality and appraise it, as such an interpretation brings out the fact that there are only four fundamental "sub-structures", or sides to a personality.

1. There is the tendencies, or disposition side or sub-structure (napravlennost), a side conditioned by society - made up of characteristics formed through and in the course of life, under the influence of the social environment, upbringing and education, and "self education" (samovospitanie). These characteristics have no direct relation with innate dispositions. They appear in different forms - in the shape of vague attractions, desires, interests, inclinations and aspirations, and so on - becoming, in the end, a pattern of ideals, an individual conception of the world, beliefs and attitudes. These are precisely the attitudes which turn tendencies or dispositions into the moral qualities of the personality and the motive force for its activities.

When analysing personal tendencies, it is important to make clear: what are, for the individual, the most important ends in life; what he hopes for, in particular, from his studies, his work and his personal life; what he considers to have been the most important thing in his life so far; how he shows his interests and inclinations are stable or readily susceptible to change; to what extent he is interested in social and political life; whether he is active - and to what degree - in his work.

Attitude to work is evaluated in regard to the assiduity or laziness of the individual, his conscientiousness or lack of it, his exactitude or carelessness, independence or dependence in his work, his enthusiasm or apathy, his sense of responsibility or his irresponsibility, his ability to concentrate on some goal or his tendency to disperse effort, the presence or absence in him of initiative, creativeness or originality.

Attitude towards people covers the individual's sociability or reserve, frankness or dissimulation, politeness or rudeness, kindness or spite, trust or distrust, tact or tactlessness, obstinacy or spirit of compromise, sence of justice or absence thereof.

Attitude to the self, includes presence or absence of a sense of personal worth, pride and modesty, ambition or lack of ambition, timidity and freedom from restraint, altruism and egoism.

2. The experience sub-structure or side comprises the characteristics which are formed in the course of a process of education and which aim at linking skills and knowledge already possessed by an individual with other skills and knowledge in process of being acquired. Among these characteristics are knowledge, pratical skills, abilities and habits that can be the outcome of the highest personal ambitions: they determine the level of education and preparedness for working life. The degree of psychomotor development can be assessed through a general analysis of practical abilities at work, sports, etc. Education as evidence of this personality experience or of the state of preparedness for a specific activity must not be confused with aptitude for a given activity and the corresponding disposition for it, which must be evaluated separately.

3. The third sub-structure or side - the individual peculiarities of the mental processes - comprises traits which depend on the characteristics of the various mental processes which are inherent in the individual appraised and which constitute the forms in which reality is reflected in him. In each of these traits there is a different and complex relationship with, on the one hand the social and biological factors which condition them, and on the other hand, the pratical reality(which plays a specific role in their formation).

We shall examine a few of the many traits included in this sub-structure, paying particular attention to those which are especially significant for the character appraisal and easiest to analyse and assess.

In the study of the affective characteristics, what must be taken into account is the state of mind or temperament (the "humour" of the medieval philosophers) of the individual being appraised: optimistic (even in difficult circumstances) or downcast, calm, balanced; dismayed and lacking assurance when faced by various kinds of difficulties, or, on the contrary, confident in his own abilities even to the extent of rashness. To assess these characteristics in an individual, the following points must be considered. Is the temperament stable or changeable? Does his mood change gradually or suddenly? To what extent does he react to impressions - do all happy events produce in him a feeling of joy, or is he much put out by small pin-pricks? Does he display no particular inclination to gaiety or to sorrow in the ordinary circumstances of daily life? Is he irritable, and does his irritation arise suddenly or build up gradually? How does he behave when he is compelled to await events? Does he recover quickly from setbacks, or does he go on being depressed when the reason for it has passed?

The individual's capacity to master his emotions (this matery being an attribute of the will - self-control) can be determined according to the following characteristics. In difficult circumstances does he always keep calm - or sometimes lose his self-control? Can he remain outwardly calm in the midst of great general excitement? Does he find it easy or hard to control feelings of rage? When disturbed by irritation or other emotions, is he apt to do things which immediately afterwards he regrets? Does he necessarily show his emotions in gestures, facial expression, changes in the voice, etc?

Finds concerning affective and psycho-motor vigilance also have to be taken into consideration. How does vigilance manifest itself in the individual during instruction? What is its intensity and duration? Is it revealed in other circumstances as well? Does vigilance observed during the educational process disappear only to return later on, and in what circumstances?

The individual's capacity for attention can be assessed in the course of the appraisal interviews by considering the following points. Does he find it easy or difficult to do two or more things at once (for example write a letter and chat at the same time, observe his surroundings while working, etc.)? Does he, at the theatre or cinema, notice everything that happens on the stage or screen, or does he tend to concentrate attention on one thing at a time, etc? In observing the individual being appraised, in talking with him or his comrades, in assessing in live situations, answers must be found to the following questions.

- Is he capable, while carrying out some given task, of noticing what is happening around him?
- When he is being question, how easily can he slip from one topic to another?

- Does he readily observe and remember facts of secondary importance, passing remarks;
- Can he work while his fellow pupils are making a noise;
- Is his attention easily distracted when he is being given explanations?
- Does he sometimes give the impression of paying attention to what is being said, only to have it proved later on (at question time) that he has not really been listening?
- Why, in most cases, does his attention wander: inability to concentrate, or attention absorbed by some other train of thought?

To get a general assessment of the memory and its type (visual, auditive, motor, combined) means noting whether the subject:

- goes over and over again something he has to learn, or tries to associate the new material with something he already knows, doing so in his own individual way;
- prefers, when studying a subject, to read for himself or listen to others reading, or perhaps to read aloud to himself;
- in reaclling a subject, tries to remember where and when he heard about or read something about it before, on what date, or where in the book;
- easily remembers names and historical dates or can only remember the general sense of what he has read;
- remembers figures, formulae, names, etc., better when he has heard them spoken (or when he has read them) - knows how to make use of what he has learnt.

To assess the individual's thought processes and mental agility implies finding out whether the pupil:

- quickly and fully understands questions put to him;
- gives relevant answers;
- replies too quickly and without reflection, or in a stereotype fasion;
- shows signs of creative thinking in his answers;
- shows any aptitude for discovering useful aids in carrying out a task;
- is quick or slow to find the solution to a tactical problem (in competitions, for example).

Care must be taken not to confuse the pupil's mental agility and his level of education and maturity.

In assessing the pupil's will-power or determination, these are the main factors to be considered. How far is he capable of pursuing a chosen goal - does he persevere once he has made a decision? Is is tenacious and if so, to what extent does he strive to overcome difficulties in the way of attaining the goal? Does he readily carry on a job to the end or does he cool off after starting it energetically? Which is his main feature, tenacity or obstinacy or an excessive tendency to give up? It is important to study and assess his reactions to fear and anxiety, and to ascertain whether he is prone to rashness unredeemed by a critical sense. To determine the degree to which he can be firm and resolute, it is important to find whether he is likely to hesitate in making decisions, and conversely whether he is apt to decide too quickly and on insufficient grounds.

4. The biological base sub-structure or side determines the temperament of the individual - or, as it is now fashionable to call it, his "typological traits". Its components stem from the inherent capacities of the higher nervous system (vyssaja nervnaja degattel nost'); these capacities are as likely to be innate in a person as acquired, though they may be modified in the course of his life (e.g. following an illness). To modify these traits requires a certain amount of training but the changes which can be induced in them are considerably less pronounced than in the characteristics forming the other personality sub-structures or sides. It frequently happens that the latter characteric's mask or compensate to some extent the traits here in question. For this reason, it will only be possible to talk of changes in absolutely clear-cut cases.

The signs by which nervous strength (or weakness) is revealed are brought out in considering the following behavioural characteristics: the extent to which the pupil is resistant to external factors when at work: the impact of noise or other unusual or strong sources of irritation; his ability to keep his self-control in difficult or dangerous situations; his ability to do something for a long time without a break - while producing the same results, etc.

Analysis of certain behavioural peculiarities provides evidence of a number of characteristics. Those revealing the mobility (or stability) of the nervous system are shown up by studying: the subject's ability to change over quickly from one kind of activity to another or to integrate quickly into the work process; whether his previously acquired habits and abilities constitute an obstacle to learning a new job; whether he can readily pick up new habits and put aside old, bad habits; his ability to take decisions quickly (in competitions, for example); his facility in going to skeep or waking up quickly, etc.

As regard equilibrium (or lack of it) in the nervous system the questions to be asked are: Does he work steadily or by fits and starts? What is his usual mood - is it calm and even or is it subject to frequent change? How does he stand up to enforced waiting - is he calm or strongly irritated? How does he sleep when tired - does he sleep more soundly or does fatigue provoke insomnia or disturbed sleep? etc.

Evaluation of pathological changes in the personality is of course a matter for the physician.

The character is to some extent the skeletal structure of the personality, constituted by its most pronounced and most closely correlated features, and therefore most clearly evident in an individual's activities. All character traits are personality traits, but far from all personal characteristics are sufficiently pronounced to become character traits.

Moreover, it must be recognized that the character has far more complex traits, where negative attitudes are dominant: cosmopolitanism as opposed to patriotism, lack of scruples opposed to high principles, dishonesty and honesty, individualism versus altruism, obstinacy and flexibility, pessimism and optimism, etc.

The aptitudes which are also general personality characteristics can be evaluated on the positive results obtained in a given activity and the degree of agreement between the structure of the personality and the demands made on it by that activity. In assessing the aptitudes, it is important to take into consideration their recognition by the people around him. A proper appraisal of the pupil's aptitudes is most important for vocational counselling and guidance. His psychomotor aptitudes can be assessed through various manual tests, for example. Other aptitudes can be evaluated in similar fashion on the basis of the pupil's performance in relevant activities.

Care must be taken to guard against experience in a given field of work being mistaken for aptitude - such experience is to be evaluated in the context of the "experience" sub-structure (see above).

In general, one might say that each personal characteristic is to be assessed through the study of a corresponding activity. Lenin drew attention to this as long ago as in 1894 when he wrote: "By what sign can we assess the true intentions and sentiments of real people? Obviously by only one - their needs".[1] The greater the number and range of activities studied, the greater - and the more certain - the volume of data on which to base the assessment of the subject's personal charcteristics.

It is difficult, however, for one man alone - the teacher, for example - to observe and appriase a pupil in all his different activities. For this reason, and to ensure a greater objectivity in the collection of data, it is desirable to follow the methods of generalizing independent characteristics. Questions are put to a number of persons who know the individual to be appraised; these questions are centred on the typical features of his various activities and the evidence in these activities of his personal characteristics. When further generalizations are needed, we may have recourse to a series of interviews and live observations (or induced situations in the laboratory). The data obtained are compared to discover the reasons for any divergencies. More refined and precise data can be obtained through a further series of interviews and observation.

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[1] Lenin, V. I., Complete works, Vol.1, p. 423-424

Conclusion. While recognizing that it is not easy to draw the psychological pattern of a pupil, we affirm that psychology can provide a sufficiently precise answer to the questions: "What must be studied, and how, in order to draw up a sufficiently objective and accurate personality pattern?".

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Pre-vocational Training, Education and Vocational Orientation within and outside Schools

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TECHNICAL AND SCIENTIFIC EVOLUTION AND POLYTECHNICAL EDUCATION

BY

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greater standardisation of production; methods of planning and management in both industry and agriculture are more and more tending to follow a common pattern, through the application in each of these sectors of scientific principles of work organisation.

Against a background of general social advancement, polytechnical education helps to go beyond the single-skill approach to employment (the result of high occupational specialisation) and makes it possible to train workers capable of understanding the production system as a whole.

It is vital to clarify the place in polytechnical education at school, of principles common to the whole range of technical fields and to the organisation of production and work. We must remember that science has practical applications in general technical fields, in biology and in economics.

The following are some examples: resistance of materials; mechanical engineering and metallurgy; thermotechnics; electrotechnics and industrial electronics; the general bases of chemical engineering; agronomy and zootechnics; agricultural and industrial organisation and economics. There are many other fields also, in which instruction and training touch upon a wide range of typical production factors of a general nature, often going far beyond the limits of any specialised branch of activity.

All these fields demand instruction in a range of knowledge and skills common to the various types of production and facets of working life; the laws of natural science enter into this instruction, not in isolation but in close and varied inter-relations to serve as the foundation for understanding many complex technical phenomena and to explain certain technical requirements.

Specialisation in production and the constant creation and development of new techniques bring into being specific technical disciplines, most of which relate to particular industries and particular groups of technical processes.

As a result, the correlations between natural science and applied technology and the organisation of production become more and more complex with the advance of science, and the processes of integration and generalisation go on side by side with increasing specialisation and differentiation.

The problem of establishing the links between science and production may therefore seem very complicated.

For our purposes, the scientific know-how of production can be split up into three broad groupings, corresponding to the three degrees or levels of general theory relating to production techniques: general, basic scientific knowledge (in the natural sciences, mathematics, social sciences and economics); technical knowledge relating to general production practices; special technical knowledge relating to practices in in specific and comparatively narrow fields.

On the basis of this classification, we can go on to select knowledge and skills of a polytechnical nature appropriate for teaching in schools and based on the pedagogical criteria given below:

- the presence of typical elements common to the main branches of production and the chief types of trade or other occupation;
- possibility to ensure their relative stability and continuity over a fairly long period of time;
- conformity with the general trends of scientific and technical evolution;
- the possibility of planning education in a suitably integrated system of knowledge and skills, graded according to degree of generalisation and relating to the three groups defined above (general scientific; general technical; special technical);
- a close link with real life and practical work, taking into consideration the technical and production framework in which the school is set;
- accessibility of polytechnical education to the pupils in a range of classes (the pupils' level of general knowledge and practical experience must be the starting point);
- the opportunity to satisfy the pupils' natural interests and curiosity in technical subjects.

3. Only the broadest and most general polytechnical knowledge of the scientific principles involved in the principal branches of production can be dealt with in the course of general education; they must be brought into the basic science subjects without disturbing the pedagogical principles of instruction in these subjects.

A good deal of work is being done in the USSR on the content of general secondary education syllabi, in the light of scientific and technical change and of the need to develop the pupils' intellectual abilities to the maximum and prepare them for practical work.

A new syllabus for teaching physics has been brought out, for example, which considerably reinforces the polytechnical character of the subject. The new problems in physics are included in this syllabus: the basic elements of the theory of relativity and the quantum theory, nuclear physics, the physics of elementary particles. The new courses also provide for much better explanations of the mathematical and experimental methods of physics.

Considerable improvements have been made in the mathematics, chemistry and biology syllabi. Through their higher mathematics courses, the pupils learn the technical skills needed for controlling production processes.

In the chemistry course, they learn the scientific bases for various synthetic products and materials. The biology course is planned to give the pupils a grounding not only agriculture (that is, its fundamental biology) but in other spheres of production too.

In connection with current scientific evolution and its increasing role in production, the proportion of general scientific knowledge in polytechnical education has to be increased so that the pupils will get a sufficient grasp of the fundamental ideas and laws of science to be intellectually able to solve the most typical problems involved in production work.

The tendency of the natural and social sciences (including economics) to come closer together, and the growing importance of mathematics in these sciences as means to raise national production, give added weight to the role of the social sciences in polytechnical education for schoolchildren. It is becoming, in particular, the role of economics (like the "traditional" sciences) to indicate the ways in which the "material and technical" basis for social advancement can be assured. Economics is taking a bigger and bigger part in the organisation of work and production, in the planning of the national economy and in social progress in general.

Today, the role of the social sciences is becoming more and more important in the study of human relations in no matter what field of activity. Sociological and psychological research into these relationships under industrial conditions is opening the way for raising productivity and for improved technical processes and procedures. This aspect of the social sciences adds to their importance in preparing children for employment in modern technical conditions.

4. Great importance attaches to the selection of the material to be taught in the second group, general technical subjects.

We know that in the course of technical progress, changes in practice, automatic apparatus and methods common, it is fair to say, to many different industries, come into being and become part of normal technical practice. Clearly the relevant scientific background must be just as generally applicable. In the teaching of general technical subjects, basic principles are made more concrete when illustrated by particular examples drawn from different technical fields and processes, organisation and production principles and various occupational activities.

Technical change and the mechanisation and automation of production would be inconceivable without the constant development of the appropriate machines and apparatus and equipment relying on electricity, electronics and other applications of advances made in physics.

Today when workers have to deal with a constant and continually increasing flow of new information, when processes are constantly being speeded up and increasingly powerful machinery is being constructed, it is vitally important to ensure a scientific organisation of work based on the new techniques.

In the light of the foregoing, the general technical instruction given to schoolchildren must cover:

- the typical machine parts, mechanisms, motors and machines encountered not only in industry but in everyday life, in the service industries, in scientific research and in cultural activities;
- basic knowledge of sources of energy, electrotechnics, industrial electronics, elementary knowledge of automation of production and cybernetics;
- general principles of modern technology and their application to actual processes;
- general principles of the economics of production, objectives of the planning and organisation of production, based on actual data on the structure and management of undertakings.

Instruction in these social sciences will not have the desired affect if the teaching is too schematic and abstract. Instead it must be related to techniques and technology in general. It must be made concrete, taking into account the types of industrial production in the neighbourhood of the school or in the plant where the pupils are given their training for work (trudovoe obučenie).

The conditions under which the schools operate are very varied: in urban schools they are determined by their industrial surroundings, in rural areas the schools are subject to their climatic zone. Consequently the teaching of basic production factors may follow any of several variants, provided the general technical content - on machinery, electro-techniques, automation and economics - remains unchanged.

Technical and scientific evolution has a major impact on job content in different branches of activity.

At different stagesin the evolution of production, the nature of work has changed in the light of current scientific and technical knowledge, practical applications and the characteristic features of the work methods.

With the advent of mechanisation and automation, an inter-action between the working appliances and the objects worked is becoming more and more marked; the work is no longer carried out by human hands but through the agency of machines or of physico-chemical processes taking place within the apparatus. Such operations as are still performed by human agency are becoming increasingly separate from the technical operations and are acquiring a new content of their own.

Operations involving the treatment of materials, assembly work and other physical tasks on the part of the worker are being increasingly replaced today by operations such as the reading and preparation of drawings, diagrams and record cards; planning, calculating, setting the machines; measurement and checking of the work done. The worker watches the technical process on his instruments, plays on the controls, using apparatus and machines to regulate its progress, and watches for faults and corrects them. Mental activity is becoming more and more important in his work. He must be able to appraise a situation rapidly make continual changes and adjustments, immediately resolve any technical problems and generally apply his powers of creative imagination and rationalisation.

The job content in any technical field is constantly becoming more intellectual, demanding an increasingly greater element of research.

The mechanical, power, technical and transport "functions" of labour are becoming increasingly the province of machines and mechanical or automated apparatus; the same applies to the "logical" functions in work.

It would be a mistake, however, to consider (as do some economists and socialogists) that changes in the nature of work under automation will result in the abolition of differences in working activities and the total disappearance of present occupational structures.

There is certainly today a drawing together of the mental and the physical types of work. This is one of the distinguishing features of social advancement. There remains, however, and will remain for some time to come, a certain discordance between highly skilled work(conerned with the preparation of programmes for automated installations, their construction and control) and work calling for operational functions which do not demand very high qualifications (e.g. those of the operator of semi-automatic equipment, the production line assembly worker, the fitter's mate., maintenance mechanic, transport worker, etc.). A degree of division of labour still exists and will long continue between production workers, machine operatives and repair and maintenance workers.

There is therefore every reason to suppose that even at an advanced stage of the present technical and scientific revolution there will still be a division in occupational structure among the workers assigned to highly developed automated techniques. Such a division does not exclude - on the contrary, it presupposes - a balanced development among all workers, their access to and acquisition of general and specialised technical skills and knowledge as well as practical production skills.

Considerable importance attaches to the role of the polytechnical education of the general and the vocational schools in training the rising generation.

Careful analysis of the distinctive features of employment show that, in spite of the essential differences between various types of activity due to the specific nature of techniques and technology, there are common elements in many practical skills. There is no doubt at all, for example, about the similarity of the practical skills required for operating this or that machine tool: it is evident that skills required for work on machine tools for metal working can readily be transferred to woodworking machines.

Similarly there are many points in common in driving motors, machines and transport vehicles (provided, of course, the differences in their purpose and construction principles are not too great), or in their maintenance and repair. There are many commong features in the assembly of different products - apparatus, machines, engineering works, etc.

In organising training for work one must be guided by the polytechnical principle that every single facet of technology should be seen, both in theory and practice, as a concrete application of general scientific principles, and that the assimilation of general practical skills, readily applicable in different technical processes, should be the basis of training in working operations.

Training for work should ensure the acquisition of the following general practical skills in technical and technological fields:

- knowledge of how to handle the most important hand tools in different types of work;
- ability to read a finished drawing, or make a sketch, and mark out on the material the principal shapes and dimensions;
- ability to set mechanised tools and apparatus and the most common machine tools, and ability to use them;
- ability to find one's way about any reasonably simple piece of machinery, to see that it is in good working order and get it ready for use;
- ability to set and start up an internal combustion engine, an electric motor, a pump , compressor or any other small power tool;
- ability to carry out the main types of electrical assembly repair work, following a simple diagram;
- knowledge of how to use the chief measuring and control instruments.

This list of practical skills is long enough. It is the basis of the general polytechnical education that youngsters must obtain for employment

Research has proved that it is possible to apply to training for work highly effective methods which, backed up by appropriate teaching aids, enable the pupils to be trained quite rapidly in practical skills and abilities of a general nature, giving them a sound polytechnical basis for the more specialised training they will get after leaving school.

For this the common features are brought out in the main components of the structure of the working process, i.e. in the groups formed by these components: manual work; mechanical treatment of materials; control of machines; fitting and assembly of various objects. Precise instructions must be worked out for the corresponding exercises in the training for work, and a system of key points to determine exactly the optimal characteristics of the operations to be performed: tempo of work, intensity of effort, spatial co-ordination. In connection with this, use is made, from the very beginning of the training for work, of various aids for helping the pupils in their work, and of simple control apparatus.

Research has also shown that the use of these methods and aids in training for work facilitates the best possible combination of this training with the manufacture of useful articles by the pupils. It also helps to create very favourable conditions for inculcating in the pupils an appropriate attitude towards their work and good discipline and working habits.

Our present technical and scientific revolution has its repercussions also on the equipment of the schools providing training for work. Nowadays these schools have complex apparatus and technical or cybernetic equipment, projectors, tape recorders, television, etc. All these aids help the pupils to understand their lessons and permit the instruction both to be given in depth and to cover a wider area.

In devising and using this teaching material the principles of scientific work organisation and ergonomics are taken into consideration, which ensures higher educational impact.

The use of these new aids and equipment has had the effect of changing the nature of the pupils' perception of knowledge and has transformed the conditions of learning (quantity of information absorbed per unit of time, receptivity, etc.). The result is more thorough assimilation of the instruction and swifter progress through the syllabus.

Conclusion

The purpose of polytechnical education and training for work in the general schools is to achieve a balanced development of the pupils and to prepare them for life and practical work activity.

Training for work is given in general schools as well as in vocational schools. Its objectives are:

- to provic basic science training in sources of energy, technical processes and technology, and modern production organisation (using the principal branches of production as a basis);

- to disseminate knowledge of developments in the branches of industry and agriculture which are today the key factors and vanguard of the economy;
- to provide the pupils with practical skills and abilities of a general nature applicable to the most characteristic working tools and instruments of modern production and devices of mechanisation and automation;
- to develop in the pupils an interest in and aptitudes for technical fields and processes, giving them a liking for technical subjects and a creative attitude towards work.

In our era of technical and scientific revolution, the volume of production is increasing and the services sector expanding. The national economy therefore needs more skilled workers trained in modern techniques and automated processes: machine tool operators for the mechanical processing and handling of materials, chemical plant operators, fitter-repairemen, electrical fitters, machinists, car, truck and tractor divers and innumerable types of service worker. We know that the great majority of the pupils leaving the general schools must be ready to take up work in these occupations. It is therefore perfectly comprehensible that the general education system should try to institute any and all possible measures to prepare pupils for employment in production work and other sectors of economic activity.

Raising the standard of general and polytechnical education of the pupils at general and vocational schools has a salutary effect on their relations, activities and behaviour in the social system. It helps them to find a place in the world of work which is in line with their individual aptitudes. This can only be beneficial to the development of their personality.

Polytechnical education and training, as we conceive it, enables us to bridge the gap which to some extent persists between general schooling and vocational training; it helps to lessen the distinction between mental and physical work.

Analytical and experimental work carried on jointly by educationists and specialists in different branches of economic activity will provide a basis for bringing the methods and aims of education in school into line with the demands of technical and scientific evolution. Progressive ideas on the development of the individual in the world of tomorrow, and polytechnical education and training associated with productive work by the pupils are bound to flourish and expand in line with social advancement, the development of science, and production and general cultural progress.

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PSYCHO-PHYSIOLOGICAL PROBLEMS of VOCATIONAL ADAPTABILITY

by

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To judge the adaptability of a man to a particular occupation we can refer to two conventionally chosen criteria. The first is his acquisition of at least an average degree of efficiency in his work, and the second is the degree of satisfaction he derives from his work or rather, from the actual process of his work. A man who measures up to these two criteria, that is, who has acquired the efficiency indispensable for his work and who, at the same time, derives satisfaction from his work and thoroughly enjoys it, may be considered adaptable. But what if a man meets with only one of these criteria?

It is unlikely that a man who enjoys his work would be incapable of doing it as he should. Should such a case nevertheless occur, we should have to explain it by the fact that the satisfaction felt was not derived from the nature of the occupation itself: the true level and character of the tasks that his occupation offers him are either unknown to him or else beyond his grasp.

Now let us turn to the second case, that of the man who is good or even very good at his job but who derives absolutely no satisfaction from his work. If we take it that adaptability is the individual index or the intrinsic worth of a man, then we are bound to recognise that, in such a case, the man is not working to his full potential, that he is being held back by feelings of indifference or repugnance for the work. In such an instance it would appear to be less a question of inadaptability to the occupation than one of incomplete adaptability. It is difficult to forecast the form that this incomplete adaptability will take or its consequences.

These two criteria are undoubtedly relative; at times they may be subjective. What is the meaning of "average efficiency" as applied to occupations for which no quantitative standards of output either have been or could be laid down? And what is meant by "satisfaction from the actual process of his work"? Can we allow ourselves to be guided by such vague criteria? It should be noted here that, while there is an area in which estimates of efficiency and satisfaction should be viewed with caution, there are other areas in which such estimates can be reasonably precise: in other words, a man has acquired efficiency or he has not, he experiences satisfaction or he does not. When the criteria can be sharply defined, the judgement as to adaptability also becomes more precise. It must be admitted, however, that a certain percentage of judgements of adaptability will remain in the area of uncertainty, given present levels of knowledge. This we have to accept.

It is highly unlikely that an individual would be able to meet the requirements of the two criteria that we have selected, as soon as he starts work. To attain the necessary degree of efficiency at work, he needs to acquire theoretical knowledge, practical skills and ability or dexterity in their performance. A psycho-physiologist would say all these are acquired by means of a coupling process or harmonisation within the psycho-physiological make-up of the individual, in accordance with the particular characteristics of the tasks involved in the occupation and the skills or other qualifications it requires. It is possible that certain innate peculiarities in the psycho-physiology of an individual may, in a general way, prevent him from adapting to a given occupation. But this is not always apparent from the outset.

The converse is equally true. It would be impossible either to derive satisfaction from, or to have no satisfaction out of doing a job without having acquired the knowledge, skill and ability it requires. If I am to be able to judge whether a certain occupation appeals to me or not, I must first reach a certain level of proficiency in it, must have become a "professional" in it. It is by no means uncommon to see opinions on an occupation change with time. There is a proverb which says that you only need to taste a drop of seawater to know that the sea is salt. But this does not hold true for most occupations. You need to taste much more than a drop to know what they are like.

From this, it can be seen that vocational adaptability cannot be considered as a characteristic or trait which a person possesses before he ever begins work, something that is already in him and that can be discovered or determined in advance. On the contrary, this adaptability should be seen as something which develops during a man's working life, as he becomes proficient in his occupation. Gradually, while he is acquiring the necessary level of proficiency, he will begin to feel satisfaction in his work. Undoubtedly too, "professionalisation" - or the development in the beginner of the "professional touch" - is a fairly long process. That is when the individual's adaptability begins to take shape, and it may be assumed to go on developing until he ceases to practise the occupation.

We should add that, in Soviet psychology, there is nothing surprising in the view that vocational adaptability is formed while practising the occupation. All the properties or qualities of human nature are developed through practical experience. Vocational adaptability is but one of these properties or qualities and consequently is governed by the same laws.

It is well knownhowever, that not everybody develops this adaptability. This was why we found it necessary to fall back on criteria. By applying them it can be seen that, in some cases, adaptability does not develop, or at least not within appropriate or admissible time limits (for it must always be remembered when talking of the occupational life of an individual, that the span of a man's active working life is limited in time). In this connection we have to find out which individual and constant psycho-physiological characteristics in a person are likely to permit his developing adaptability for a particular occupation and which, on the other hand, are those that will make it almost impossible for him to form such an adaptability.

As we are here dealing with the individual and constant psycho-physiological characteristics in man, the problem of man's vocational adaptability and the forecasting of such adaptability should be treated as one of the problems of differential psycho-physiology in that branch of science dealing with individual psychological differences and their physiological bases. One of the most eminent founders of contemporary differential psychology, B.M. Teplov, considered that in order to have a really scientific concept of the problem of individual psychological differences between men, a systematic study of the physiological bases of individual psychological differences, was absolutely indispensable.

What has just been said in no way contradicts the role of the purely psychological characteristics of man in the formation of his adaptability. The important role played for example, by the prestige of this, that or the other type of work in determining occupational motivation is well known. The desire to work in an occupation that is held in high esteem is stronger, and even the satisfaction to be derived from it may be greater, provided that the working conditions are the same as those of the other occupations considered. But the importance of individual psycho-physiological characteristics should never be underestimated. It is also well known that even when the motivation is extremely strong and the teaching methods highly perfected, these elements acting together do not always lead to success in the occupation, taking success to mean satisfaction and efficiency. It is in such a case that we have to devote all our attention to the role of individual psycho-physiological characteristics.

The science of individual psychological differences and their physiological bases, as currently taught in the USSR, is based on a coherent collection of experimental and theoretical data. Differential psycho-physiology is based on I.P. Pavlov's theory of the the principal properties of the nervous system, and especially as further developed by B.M. Teplov with regard to its application to man.

According to the concepts of Pavlov and his pupils, there were three such properties - the strength, mobility and equilibrium of the nervous process. These concepts were stated in the 1930's. Pavlov assumed that their "extremes" form, by mutual association, four combinations of four types of higher nervous activity. These four types could be identified more or less exactly with the four universally recognised temperaments - the strong, balanced, inert type - identified with the phlegmatic temperament; the strong, balanced, mobile type - the sanguine temperament; the strong, unbalanced type (in which excitability is the predominant trait) - the choleric temperament; the weak type - the melancholic temperament.

I.P. Pavlov frequently came back to the idea of a physiological basis behind the marked differences apparent in the behaviour of certain individuals. He subsequently rejected some variants of this theme in favour of others. We should be indulging in unpardonable dogmatism, and acting in a spirit quite contrary to that which inspired the scientific approach of Pavlov, if we were to refer only to the last variant that he published and to believe that its content provided a final and unshakeable solution to the problem. Teplov, having analysed the development of Pavlov's ideas on the types of nervous system, showed that there were not sufficient grounds for

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limiting the number of types to the four mentioned above, despite the close parallels that could be drawn between them and the types of temperament known since antiquity. Similarly, there would be little justification in insisting that there are only three main properties of the nervous system. Only systematic research could reveal the true number of these properties and their associations. The formation of these associations could be taken to be conditioned by the physiological nature of the properties themselves. It is a fact that research over the past few years has brought to light many new elements regarding the properties of the nervous system.

V.D. Nebylicin has formulated a hypothesis concerning the existence of a property peculiar to the nervous system. This property, which he called the dynamic, is present in the function of the cerebral cortex. A group of authors under the leadership of M.N. Borisova reached the conclusion that mobility could be attributed to a schism resulting in two properties: (1) a lability apparent in the speed with which nervous processes appear and disappear, and (2) instability proper apparent in the speed at which nervous paths modify. According to Borisova, data is being gathered in the Nebylicin laboratory which shows that concentration too, is a characteristic which is relatively independent of the cortical processes.

The association of the main properties of the nervous system, inherent in each individual, determines his personal characteristics. Convincing, systematically prepared data is increasingly proving that these characteristics may be considered innate, and possibly even hereditary (cf. research done in the above-mentioned laboratory by I.V. Ravič-Ščerbo). In this connection, Nebylicin considers that different specialised cerebral systems occasionally differ from one another in the characteristics that occur within them in relation to the main properties of the nervous system.

These same main properties of the nervous system which provide the biological basis for individual differences are not, and obviously cannot be, of an occupational nature. Vocations may appear and disappear, but human nature remains relatively stable. These properties however, attract the attention of psychologists and physiologists by their way of manifesting themselves in human behaviour and psychic activity. These are the properties that make up our individual dynamic peculiarities, which show through the diverse layers of habit and other acquired behavioural traits with varying degrees of clarity in each of us. They also leave their mark on studies and work alike, making them easier for some and rendering them that much more difficult, or even impossible, for others.

In his work, man is exposed to different situations:

- he may be required to concentrate intensely and for a long time or to be able to switch quickly;
- he may have to carry out easy, standard and monotonous tasks, or to undertake varied and difficult tasks;

he may have to work under conditions which place considerable responsibility on him, of which he is fully aware; at other times his mistakes may be of little importance.

All these are essential characteristics of working life, and different persons adapt to them in different ways. Their adaption depends on their individual dynamic components, that is, the peculiarities conditioned by the association which builds up between the properties of their nervous systems.

On the basis of experiments carried out in our laboratory, we can state that all occupations can be divided into two groups. Those in the first group make demands that can only be met by persons in whom the main properties of the nervous system have formed certain, well-defined associations. The adaptability of a person to an occupation of this first group depends on the existence of such associations. Adaptability to work in the occupations of the second group can be developed in any normal person, provided that an appropriate motivation can be created.

One of the occupations that we studied and that can be considered to belong to the first group is that of power switchboard operator and load dispatcher (electric power). Experiments both on the job and in the laboratory have shown that carrying out occupational duties under conditions made difficult by the danger accompanying a threatened breakdown, makes very great demands on the nervous system (research done by K.M. Gurevič, V.F. Matveeva and L.M. Edelman).

Such "absolute" demands were not apparent in the occupation of lathe operator (research done by A.I. Suhareva and I. Danč). Persons with differing individual characteristics can successfully engage in this occupation without any need for their individual traits to be smoothed out. Their characteristics remain evident in the style of their work (which remains personal), in their dynamic capacity for work(their production curve) and, finally, in the attraction that certain tasks of like nature have for them.

In our laboratory, research is being done on all these aspects. Our research into different occupations and the varying conditions under which they are practised, has led us increasingly to appreciate the great and vital force behind the theory of the psycho-physiological differential on which all our work is based.

It is well known that the application of the theory of vocational adaptability is of particular importance in vocational guidance. We consider that it would be wrong to think in terms of a predestination as regards the choice of an occupation for young people and then by some method or other, to reinforce the notion of predestination by deciding on their adaptability before they have had any experience of working life. In our opinion, adaptability is developed through, or while, working. For most occupations, provided that there is the appropriate motivation, adaptability forecasts must be optimistic.

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THE PSYCHOLOGY of TRAINING for WORK in the SYSTEM of PRE-VOCATIONAL TRAINING

by

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The complex of knowledge and skills required to participate in the creation of material goods and cultural values is a pledge handed down from one generation to the next. In the education and training of young people, their preparation for employment obviously takes an important place, and very large numbers of persons and bodies (parents, pre-school establishments, general schools, etc.) are engaged in one way or another in finding solutions to the problem. Success in vocational training and success at work depend in a large measure on the quality of prevocational training. The objectives of prevocational training are highly diversified and the conditions for its application vary widely, but the same general psychological principles apply in every case - in particular, the general psychological principles involved in the processes of "training for work" (trudovoe obučenie) and education in general. There are no ready-made answers to all the many problems that turn up in the process of prevocational training, but a knowledge of the principal psychological factors involved in successful training for work is of considerable help in selecting the most suitable means, forms and methods of training for each individual case.

The fundamental psychological principles to be taken into consideration are the gradualness of the process of a human being's acquisition of particular attributes and its dependence on the environment and educational background of the individual. It is a fact that a great many important personal characteristics germinate in the individual and develop before he starts his prevocational training. Among these are his inclination towards a type of occupation, his aptitudes, the characteristic features of his interests and personality, etc., all of which are of great importance for his future intellectual and physical work. Psychological research and experience in the education and character development of children bring to light the considerable difficulties involved in training them for their future work. Some of the chief problems are:

(a) developing in the child an interest in and respect for human labour, as well as a willingness to face up to duties to society, as a member of the community;

(b) raising training for work to the status of an essential feature in the harmonious all-round development of the individual;

(c) giving pupils multipurpose practical skills and abilities;

(d) preparing the pupils for choosing their future occupation.

Let us briefly consider the psychological principles and conditions which are vital in building up the pupils' practical skills and which are valid in every phase of training for work. While it may at times appear simple, in fact the process of inculcating these skills is highly complex and conditioned by many factors. If even one is lacking the training is inevitably affected. Among the factors involved are the special features of these practical skills (it is well known that these skills are very diverse), the organisational features of the training, individual differences in age and character of the pupils themselves, etc.

1. A matter of the highest significance is the pupil's attitude towards the instruction, the extent to which he wishes to succeed in his school work. This interest motivates an active endeavour to succeed and awakens in him the drive to persevere and overcome difficulties. Study of the causes of individual differences in the tempo of the pupil's work in the vocational schools has shown it to be a function primarily of their attitude to the work they are faced with at the school and in their trade. In other words, the objectives of training for work, as of any other type of training, must necessarily include constant attention to the character development of the pupils. This means that training for work is inseparably bound up with education in the broadest sense.

2. Training in practical skills and abilities, to be successful, must teach not only a basic knowledge of the subject but also how to apply that knowledge in solving practical problems. A course of theoretical instruction paralleling practical lessons is not always sufficient to guarantee this, and a gap or block may appear between theory and practice. For instance, pupils who can without difficulty draw and explain diagrams of electrical circuits, may have trouble in actually setting up a circuit. To be able to apply knowledge calls for special training in the appropriate procedures, and this instruction must be both during the theoretical lessons as well as during the practical exercises.

3. A great deal of psychological and educational research has been devoted to training methods, and especially to the ways of giving instructions, since these constitute an important element in training for work. The answers to these problems are bound up with basic, general principles. The following question, in particular, has not yet been satisfactorily answered in many countries: should workers be trained simply to carry out detailed orders from above or should they be trained to solve problems for themselves? The first hypothesis implies a simplified form of training, its objective solely to convey to young people practical skills and abilities to do a job (i.e. the pupil does exactly what the teacher tells him to do). Where the objective is to turn out workers capable of organising their own work, of selecting a particular way to do the job and immediately rectifying any irregularity in the functioning of the equipment, the training process becomes more complex. While in the early stages of this kind of training, the instructions to the pupils must give them detailed guidance for their activities, later on they must be so formulated as to stimulate them to work on their own and apply their own solutions to problems (e.g. by purposely being incomplete or containing unnecessary information). Various research projects have shown the importance of the instruction being drafted in clear language fully comprehensible to the pupils, of being complete but concise, and constantly kept up to date (in touch with technical change and new ideas). It is most important to know how to combine oral instructions with written instructions and demonstrations and to ensure that every pupil is in a position to follow the steps in the working process, the teacher's demonstration, the work of other members of the class etc.

4. Self-supervision or self-assessment is one of the most important elements in training. In the first place, it is vital to the assimilation of any practical skill, as a basis for greater precision in the performance of the movements. Secondly, self-assessment builds a particular and complex skill in the pupil which calls for special training. In the teaching of practical skills, it is very important to establish a relationship of cause and effect between the operation performed and the results achieved, and to put the pupil in a position to use this feed-back to perfect his movements. To be able to do so he must be trained to apply the three primary components in the self-supervision process: his sensory capacity (to know and recognise the signs indicating the correct performance of an operation); his mental capacity (to assess the importance of the different indices, reasons for the effects observed, and their possible consequences, and to be able to make a decision); and a purely operational capacity (to know how to remedy irregularities in the working process). Experience with this special training for self-assessment has shown that it can intensify the pupils' interest in, and improve their performance.

Applied to the acquisition of practical ability, self-assessment is an active process. The active principle in teaching is closely bound up with the factor of "awareness" (soznatel'nost') - knowing what one is doing and why - the very opposite of the mechanical absorption of knowledge. It is well known that a major objective of contemporary psychological and educational research is to achieve conditions which will stimulate the learning process.

5. A psychological analysis of special features of the practical skills and abilities to be taught to the pupils is extremely important. Such analysis is the basis for the proper selection of the training means and methods, for defining the pupils' tasks and determining which operations should be subject to self-supervision. Fundamental mistakes will be made if there is no such analysis. Training in specific practical skills for example, may be primarily centred on training in certain movements, whereas being able to understand the operational framework for these movements is the essential for learning the skills. It is vital to take into due consideration the special characteristics of motor, sensory and mental abilities, of principal and auxiliary skills, of multipurpose and more specialised technical skills, etc; it is equally necessary to take into account the individual differences among the pupils learning these various skills and abilities.

Prior psychological analysis of the training tasks to be performed by the pupils provides an opportunity to assess the difficulties they may meet during training and to try to remedy them. In this way it has been found that difficulties increase (1) when the precision and the speed required in the operations increase, (2) when it becomes necessary to perform several operations and control several processes at once, and (3) when the indices or criteria relied on in the course of self-assessment can no longer easily be distinguished, can be easily confused, etc. Training the ability required to master

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these difficulties calls for special exercises in which the principle of gradual progression from easy to more difficult tasks must be strictly observed. The use of special training equipment may sometimes be valuable in connection with these exercises.

The two types of practical skill already referred to - multi-purpose and more specialised technical skills - call for more detailed study. Psychological study of different types (even very simple types) of working activity reveals two series of components: (1) similar operations frequently repeated (where the repetition results in the permanent acquisition of practical skills, as well as a certain degree of automatic ability), and (2) operations comprising features subject to variation, where the worker can, by exercising reflection and problem-solving skills, use different methods. Care must be taken not to underestimate (as can happen sometimes in the course of training for work) the importance of training in purely operative skills or the training in practical skills requiring some intellectual activity; both are essential for the pupils' development and for achieving the objectives of the training. Psychological research has demonstrated conclusively that training in broad practical skills and abilities requiring some mental activity is already possible in the early years of general education. These are the skills required in planning, organisation, control, etc. The importance of these skills in developing qualities such as the ability to persuade, to reason, to set high standards for personal performance, etc., has also been confirmed by research. In training for these skills or abilities (which are important for any work activity) considerable importance attaches to exercises in solving practical problems demanding mental capacities (work planning, etc.). These exercises are most important from the point of view of the pupils' intellectual development, and especially for developing an aptitude for practical thinking.

Purely operative skills (such as are needed in, for instance, sawing and planing), in which the sensory or motor components are predominant and which are acquired mainly through suitable practice, have a more limited role. It should be noted however, that the elementary skills involved in the machining of metals and other materials and in the use of the commonest working tools (machine-tools, files, etc.) are not diminishing in importance even in the present conditions of technical development. They are still basic. Designers and manufacturers are being called upon today to produce hand tools that can be used by cosmonauts for repair jobs during space flights, and of course working with complicated automated plant requires operators to have had very high level intellectual and sensory-motor training.

In present conditions, the general principles of training for work are losing none of their importance for the harmonious, all-round development of the pupils. Just as purely physical activity without any basic science teaching, develops children only physically and interferes with their intellectual growth, so instruction in the basic sciences which is not linked with the performance of the types of physical work appropriate for children, stunts their development (both physical and mental). In psychology the sensations, perceptions (including the perception of the acts of the self and their results) and other factors created by the interaction of men and objects or phenomena in the environment are grouped together as cognitive processes. For the proper development of their cognitive faculty, to receive training for work and to participate in varied and socially useful work at a suitable level, are most important factors in the physical, intellectual and sensory-perceptive development of children, and in the development of assiduity, powers of endurance, and other qualities that can scarcely be acquired outside the world of work.

6. While considering the general principles and conditions affecting training, attention must also be paid to individual differences among the pupils, since such differences may have a decisive effect on the results of the training. The study of individual psychological differences among the pupils is a complex problem calling for close attention and special preparation as well as perceptiveness and tact from the teachers. Unless one has carefully studied the personality of the pupil, the conditions and any special aspects of his development, it is hardly possible to determine his individual personal traits, in particular his inclinations and interests, emotional and volitional qualities, temperament, character and general and special aptitudes. One of the most difficult problems, and one which carries the highest responsibility, is the determination of the pupil's aptitudes and how to develop them. Innate predispositions - the basis of aptitudes - can expand properly only in the course of appropriate work experience. In its absence, there is no basis for judging whether different types of aptitude are there or not, and at what level, etc. Aptitudes may also be brought out and developed under the influence of the pupil's volitional qualities, his perseverance, assiduity, etc. If these attributes are lacking, a favourable predisposition may lie dormant for ever. It must also be borne in mind that nature has endowed man with the capacity for harmonious, diversified development. It follows that most occupations are in practice open to any individual enjoying good health, provided he has the desire and the opportunity to learn the trade in question. The important thing is to ensure existence of the conditions which will encourage the development of human aptitudes.

With regard to preparing pupils for choosing their future occupation, we must recognise that this choice is becoming increasingly important and significant. New fields of work, new types of occupation, changes in the nature of work and the constantly increasing complexity of the demands made on the productive labour force, are all factors adding to the difficulties inherent in providing vocational guidance for youth - a task which also involves the responsibility of parents and teachers. Vocational counselling and guidance is of growing importance in the distribution of human resources. Expansion of guidance activities creates a need to examine a series of complex psychological problems.

In many countries there is growing dissatisfaction regarding the scientific bases underlying the existing systems of vocational counselling (i.e. assistance in choosing a career). There are two principal vocational guidance systems: educational and diagnostic. We in the Soviet Union believe in the educational guidance system, since unlike the partisans of the diagnostic, we believe that the determination of an individual's adaptability to an occupation calls for a prolonged study of the individual trainee and those of his personal characteristics which are significant to the occupation. An individual's aptitudes cannot be either predicted or determined once and for all on the basis of a psychological interview, however easy and convenient its methods may appear to be.

In practice, vocational guidance develops in relation to economic needs and the preparation of teachers and specialist counsellors for their guidance work.

We regard it as inadmissible to rely on ill-founded and insufficiently tested methods for determining pupils' general and occupational aptitudes. It must not be forgotten that their whole future may be decisively affected. In our opinion this should be the main consideration in the choice of the system and methods used in vocational guidance.

More scientific research is needed on the following aspects of the psychology of occupational choice:

- study of occupations and the psychological demands they make upon the individual;
- conditions and principles governing the way in which qualities important from the point of view of an occupation are built up in the course of vocational training and induction;
- psychological characteristics of the personality and the methods of diagnosing and forecasting occupational adaptability;
- motivation of occupational choice and its origins;
- the psychological bases for the methods of vocational guidance used in schools;
- the preparation of pedagogical aids for vocational guidance.

General Conclusions

Although vocational guidance came into being at the beginning of the present century, the elaboration of the scientific bases for its practice still calls for the closest attention on the part of those engaged in the main branches of study involved in it. These include sociology, educational science, physiology and psychology, economics, technology, etc. Only through the joint efforts of experts in all these fields, and of those who practise them, will answers be found for the vital question of providing appropriate vocational guidance and training for work for the young generations.

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Working Paper on

BRINGING UP CHILDREN TO HAVE A RESPECT FOR AND INTEREST IN WORK AND ON HELPING PARENTS TO PROVIDE VOCATIONAL GUIDANCE

by

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Experience shows that the most favourable conditions for building up an interest in and respect for work in young people are to be found in families where the parents make an effort to create suitable conditions for orienting the children's interests and developing their liking for work. Parents are likely to make mistakes when they do not know how to direct this process of preparing their children for choosing an occupation and have not the necessary pedagogical background. This is why any action directed towards parents should give due weight to two factors: (1) the systematic provision, within the family circle, of a form of education or training in proper attitudes to work, and (2) action to inform parents about the psychological aspects of bringing up and guiding their children.

For the individual to look upon his work as not merely a necessity but a vitally important constituent in his life, a source of deep satisfaction, he must be keenly interested in it and seek to perfect his performance. To achieve this implies bringing up youngsters to like and respect work and to have a conscientious sense of their responsibility for its results. All these elements present in training in attitudes to work become particularly important when it is a matter of preparing children to choose their future career.

Work in class under the direction of the teachers is of great importance in a child's upbringing; but the proper organisation of the work done by the child in the family circle is no less important. Introduction to work habits, training in practical skills and abilities, inculcation of a positive attitude to work and the moulding of the principal character traits of the child all take place in the family circle at home as much as at school. It is important for parents to realise that not all forms of work contribute to the physical and intellectual development of their child: its full beneficial effect is only obtained when a number of educational postulates are fulfilled. The most important of these requirements are: that the work should be suitably matched to the child's age and strength; that, once begun, the work must be completed and definite results obtained; that the purpose of the work should be short-term and clearly understandable; and that the whole programme must cover different types of activity, of graduated difficulty and complexity. Physical work must be associated with mental work. This association is specially important in the life and activity of the child since it helps develop an integrated personality.

The interest in work developed in him as a child, his inner feeling of the need to work and an ambition to perfect his performance contribute largely to the individual's capacity to work and achieve a high level of productivity.

Research by Soviet educationists[1] shows that every child can carry out physical work matched to his capacity and fulfil specific duties just as well at home as at school. Regular participation in work will develop a habit of working in the child. To carry out everyday tasks and be aware of their usefulness to himself and to others will give him satisfaction.

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[1] Makarenko, A.S.: Courses in children's education. Lecture on education of attitudes to work, Works, Vol. IV, Edition, A.P.N., RSFSR, M., 1957; Markova, T.A.: Pre-school education of children in the family circle, Učpedgiz, 1956; Pečernikova, I.A.: Education of school children linked with work in the home, Učpedgiz, 1964; Svadkovskij, J.F.: Work education for children, M., 1956; Pastuh, E.J.A.: Awakening a love of nature and farm work in children, M., 1961.

It is normal in a family for a child to have certain set household chores to do. This is one of the most important components of training in attitudes to work. In the first place, the child develops the ability to look after his own person and his clothes. Gradually he learns how to fold his clothes, clean his shoes and wash and iron simple garments. Both boys and girls should learn to do these things. The children in the family do their share of the washing-up and learn how to set and clear the table. They are taught how to look after the home (airing the rooms, sweeping and dusting, etc.).

The teacher in the school and the parents in the home teach the children how to use household equipment such as the vacuum cleaner and washing machine and other common electrical appliances. And in learning how to use them the children participate in the work of the house.

Experience and research both show that the development in children of a love of work and a wish to work as well as possible stems very largely from the attitude of the parents to their children's work.

A well-known Soviet educationist, A.S. Makarenko, has very rightly pointed out that "The main basis for the parents' authority cannot be other than their way of life and work, their civic attitude and behaviour. The home is itself a noble work, full of responsibility; the parents responsible for it have to answer to society for the life and happiness of the children".[1]

The father and mother and other adult members of the family set the example in carrying out the indispensable everyday tasks; they develop the sense of responsibility for the work done and from time to time comment on the children's work, encourage them and, when necessary, reprimand them for work badly done.

Unlike games and amusements, work calls for energy and a determined effort from the person who does it. For it to play an effective role in the child's physical and moral growth, the work must be adapted to the child's age group. Up to school age, children can only do very easy everyday household jobs. At school age the range of tasks can be much wider. Schoolchildren should be systematically accustomed to regular physical and mental work, while still having the opportunity to play.

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[1] Makarenkó, A.S.: Courses in children's education, Lecture on parental authority, Works, Vol. IV, Edition A.P.N., RSFSR, M., 1957; Makarenko, A.S.: A book for parents, ibid.

In action directed towards helping parents provide vocational guidance to and educate their children in proper attitudes to work, the class teacher (klassngj rukovoditel') has an important role to play. He gets to know the child's home conditions, the parents' occupations and level of education, their appraisal of the child's physical and mental development. He must find out what job they suggest to their son or daughter and analyse the reasons for their recommendation. All this information has to be obtained through personal interviews as well as formal inquiries.

Research has shown that parental influence on the children's occupational choice varies from one family to another. On this basis parents can be divided into a number of categories (the classification is of course somewhat arbitrary).

Group 1. The parents actively influence the child's choice, giving him concrete advice based on knowing his aptitudes and interests, his state of health and the needs of the national economy.

Group 2. The parents discuss the matter with their children but do not actively influence them.

Group 3. The parents interfere actively with the child's own plans and ideas and force him into some job without taking his wishes and interests into consideration.

Group 4. The parents do not influence the child in any way and leave him to make a decision.

The class teacher takes this classification as the basis for the method to adopt in working with the parents. Of course this does not mean there is a ready-made approach applicable to each group; but principles can be derived from it which can be applied in helping the parents to lead the child to a sensible choice of occupation. It should be remembered that the choice of a career, of a suitable job or field of activity, has always been one of the problems the younger generation finds most disturbing. Deciding what to become is a complex problem for anybody and especially difficult for youngsters just embarking on life.

A wise choice of occupation is very important for every citizen and for the State too. On the personal plane, the right choice means job satisfaction for the man, the growth of a spirit of initiative and a creative attitude, and also less fatigue because he is doing work he likes. From the point of view of the State, a sensible choice of occupation goes hand in hand with a rational training of manpower for the national economy, for when the worker is employed in work which interests him, there is likely to be a higher rate of productivity, lower staff

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[1] Dobrynin, M.A.: Family influence on occupational choice of school children in the senior classes in Problems in school vocational guidance and counselling, Moscow, 1969; Galkite, G.I.: Study on the influence of the family on the occupational aspirations of school children, ibid.

turnover and fewer dropouts in training.

A celebrated Soviet educationist, Mrs. N.K. Krupskaja, has pointed out the great social implications of the matter in these words: "Wise choice of occupation is of immense importance for the work, for production and for the worker himself.... This is why when workers are being selected one should have a clear understanding about what persons should be allocated to this or that type of work. The worker's characteristics - i.e. the personal qualities, knowledge and skills needed for work in this occupation or that - is of capital importance."[1]

The problem of occupational choice has to be considered in relation to the subject's age. It is especially difficult for adolescents of 14 or 15 years, and they should always be assisted in their choice by teachers and parents. A wise choice becomes particularly important for children who want to go on to vocational school or technical college after leaving common basic school. It is also important, however, for those who go on to the general secondary schools; if they choose wisely and in full knowledge of the facts at this stage, they will not make any mistakes later on and will be able to prepare for the occupation selected. But occupational choice is vital and decisive for pupils in the terminal classes. Ways need to be found for giving them practical help for their placement in productive work, that is in life itself.

Generally, the choice of occupation is linked with the young person's interests and aptitudes (for technical subjects, medicine, teaching, etc.). Our starting point is the principle that no man is entirely without aptitude for any kind of activity. Furthermore, any normal, healthy individual is capable, up to a certain point, of the most varied kinds of work. At the same time, however, an individual has optimum aptitude for certain kinds - or even for one particular kind - of activity. The fundamental problems for the educationist is to discover the field in which the individual is likely to make the most of his potential, where he can be of most use to society and get the greatest job satisfaction. Correct diagnosis of these factors by teachers and parents is one of the most important bases for making the right occupational choice.

What are the signs or criteria by which parents can judge their children's ability? One is a definite interest for a particular sphere of knowledge and the tendency of the child to busy himself happily without constraint in whatever work interests him, giving up all his free time to it. Of course, this interest does not always spring up suddenly and spontaneously, nor does it always indicate the presence of any special aptitude; but in most cases there is some correlation between these elements. The parents' job is therefore to encourage their children's interests actively and try to see that these interests do not remain superficial but become deeply rooted and stable. Some children quickly become enthusiastic about a given kind of work but cool off as soon as the first difficulties or obstacles become apparent. With such children it is unrealistic to hope that appropriate aptitudes will eventually form and develop.

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[1] Krupskaja, N.K.: Works, Vol. IV, Edition A.P.N., RSFSR, M., 1959.

Another criterion is the quickness or ease with which children manage to acquire particular skills and abilities. This capacity may become evident in very young children or in older ones. Speed of assimilation is not always a guarantee of aptitude, however, and it is important to remember, in this connection, that work done quickly must still be up to standard.

An individual will thus be considered gifted if he is able to assimilate a given occupation quickly and well, if he picks up the relevant skills and abilities more easily than other people and if, in the course of his work or training, he achieves results well above the average.

Many parents worry whether, in general, it is possible to develop aptitude for one type of activity or another. Certainly it can be done: aptitudes develop in the course of work - they grow up through work. While acknowledging this, however, it has to be remembered that if the objective set is to develop only moderate ability - in music or mathematics, for example - to the highest possible level, the hoped-for results will not always be achieved: the skills and abilities acquired will be too few and too poor in relation to the time and effort expended.

Apart from the matter of interests and aptitudes (the "I want to" and the "I can"), the choice of occupation raises questions of a social and economic nature. What occupations are useful to society? Which are most in demand right now and what are their future prospects? These problems are extremely important. They must be resolved jointly by the school, the family and society.

It often happens that occupational choice is swayed by the fact that some job or other is currently popular or fashionable or offers expanding opportunities. Recent observations[1] show that the technical trades (especially in radio, electronics and automation) have a very high attraction for young people, both boys and girls, while some service occupations and the building trades, for example, do not interest them at all. It is not wise to choose an occupation solely on this basis of its popularity at any given point in time. At interviews with pupils in the terminal classes, I often hear it said that they want to go on to study at technical school or college, but not all these pupils show any pronounced interest in technology, and often enough their progress in physics and mathematics is poor. When asked why they want to choose these technical fields, the children may refer to their parents' advice: as the twentieth century is an era of technology, they must choose jobs to match. Certainly, modern technical evolution and the automation of production call for large numbers of workers with technical training;

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[1] Golomstrok, A.E. and Kondrat'eva, L.L.: "Occupational goals of terminal class pupils" in *Vocational guidance work in the school*, Kaluga, 1968.

is borne in mind when attempts are being made to interest him in an occupation, a good many disappointments and useless emotion can be avoided as there will be fewer cases where they turn out to be unfitted for the occupation selected. Parents should therefore consult the physician in good time to ascertain whether there are any indications advising against certain occupations for their child. In the USSR such consultations are available in district polyclinics with doctors specialising in the treatment of adolescents. The doctors have at their disposal an inventory of such indications affecting the vocational training and employment of young people.

Choosing an occupation gives rise to many difficulties today. Specialisation is at such a pitch that, without special training, it is becoming impossible to find a way through the maze of different jobs in every branch of industry and economic activity. What do boys and girls really know about it? It appears from inquiries that their knowledge of the world of work is in fact very limited. They know about very few types of occupation, in proportion to the number now in being. A vast country-wide campaign needs to be organised, through press, radio and television, to provide information on current jobs, the type of work they involve and their career prospects.

The more that youngsters know about different jobs, the easier it will be for them to settle down in life. The task of informing them should, however, begin in the home. In general, school children do not know very much about their parents' work. It is something if they even know where their parents work and have some idea of what their trade is. Very few of them can say what their father and mother actually do. Parents should talk about their work with their children, tell them what they do and what the articles they make are useful for. If they have the opportunity they should show the children where they work, explaining at the same time what sort of work is done in the factory, etc.; this would be the first step in familiarising them with the different occupations. Parents could go much further - they could come to the school and talk about their work and their factory with a group of pupils. The parents of a whole class of children usually cover between them a great variety of jobs. They could give the children a very lively picture of the content and nature of their occupations, the career prospects, opportunities for creative activity, the knowledge and practical skills and abilities of the people working in the same field.

It is important to talk to children about how to prepare for and get a start in the occupation. Becoming familiar with the work of their own parents and the jobs of other members of the family will help to broaden their ideas about how to earn a living. Special attention should be given to jobs at skilled worker level, since children often have mistaken ideas about them. The parents have a big part to play. Many cases have been noted where skilled production workers, by arranging highly interesting interviews with groups of children, have inspired the youngsters with a liking for the work and respect for the workers.

We have seen that in choosing an occupation - a way of life - a great many factors have to be taken into consideration: interest in and aptitude for a given field of work; state of health; the demands the occupation makes on the individual; social and economic factors.

To prepare their children for choosing an occupation it is abolutely essential for the parents to know where their children can get the training needed for this or that type of job. There are various publications providing relevant information on the subject.

Many parents think the best way for their children to embark on a career is through entering a higher education establishment (recent research has proved this belief to be widespread). It is easy to understand why parents should think this. They earnestly want to see their children becoming very highly skilled specialists and are encouraged by the fact that the number of places in higher education in the USSR is increasing every year, and that the Soviet Union is the country with the highest number of students in the world. Sometimes, however, parents forget that the way to higher education may lie through production work, where the youngsters learn the practical skills needed for their future occupation. For young people, production work is the school of life. It is no impediment to continued study. The network of correspondence and evening courses in the USSR is expanding vastly. Labour legislation gives young production workers who undertake further study a whole series of advantages intended to help them to succeed.

A considerable number of young people leaving the general schools go into production work. It is important to prepare them in advance for the choice of a suitable skilled trade. For this purpose, they are made familiar with the different types of trade taught in the vocational schools and technical colleges.

The preparation of young people for their occupational choice cannot be left to their last few months of school life. This preparation is a long process which takes place during their lessons, their extra-curricular activities, group activities and other tasks.

The parents, however, who have wide experience and know better than anyone else the character, interests, stamina and state of health of their children, should help them, by giving suitable advice, to choose an occupation. They should help them develop a liking for work, without which real success is hardly possible in any field at all.

To fit parents for this task the USSR has developed a widespread information campaign to disseminate educational and psychological data. Information on education and training in attitudes to work and on vocational guidance is made available on a mass basis. This campaign is conducted through the press, radio and television; there are regular broadcasts and TV programmes for parents, and there is a broad coverage of lectures and "parents' universities" for their benefit. Eminent professors, teachers and various social organisations have an active part in this network. Special series of educational books and pamphlets and other educational materials are brought out specially to help parents in bringing up their children.

General conclusion

The occupational choice of boys and girls cannot be left to systematic counselling work on the school alone. It also depends on the parents' influence in educating the children at home.

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TRAINING FOR WORK AND VOCATIONAL GUIDANCE IN THE RURAL SCHOOLS

by

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The education and training for work provided in the rural schools take different forms: pupil participation in the production team (brigades), agricultural experimental work and study groups for young mechanics, technicians, inventors and naturalists.

It is normal practice for the kolkhozy and sovkhozy to help the schools in providing training for work: they supply the schools with the necessary equipment (tractors and other machinery) and make available fields and farm facilities for organising the work of the children's production brigades, they supply qualified instructors for the pupils and specialists to look after the placement of rural school-leavers.

Throughout the ten-year school programme the rural schools allocate two hours a week to "training for work". During the summer months practical agricultural work is organised on the basis of one full week for the children in the fifth and sixth years of school, two full weeks for those in the seventh year and a month for pupils in their ninth year.

The children can also attend optional courses to supplement their training for work from the seventh year onwards.

The content of the training-for-work syllabus in rural schools is based on the following principles:

- farm work is linked with technical subjects (or with service occupations in so far as the girls are concerned);
- a great variety of jobs should be carried out: soil preparation, sowing, cultivating and harvesting in the fields and vegetable plots, etc.; work in different stock-raising activities, poultry raising, providing forage for cattle, milking, etc.;
- the difficulty of the practical and experimental work is gradually increased;
- both agricultural technology and mechanised agricultural techniques are taught;
- in the course of their training for work pupils in the ninth and tenth year classes carry out practical work (praktikum) related to their lessons in the basic sciences;
- in their fifth, sixth and seventh years the pupils work in the rural school workshops and on the rural school plots;
- in the top classes the pupils work in the production brigades, in the work and recreation camps and the forests in the school district;
- their training for work is based on polytechnical education principles.

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The application of the polytechnical principle to basic science education means that the pupils' studies are closely related to life and work and the development of the national economy, and this is reflected in the new syllabi for the general schools. Similarly, in the training for work, the most important aspects of the natural sciences (on which agricultural production is based) must be included in the syllabus.

The well-known Soviet educationists and political leaders, M.I.Kalinin and Mrs. N.K. Krupskaja, have often drawn attention to the need to create a link between the subjects studied and the work methods applied in the different branches of the economy. Establishing such a link between instruction in the natural sciences and training for work means that the teacher has to understand the technological and economic bases of agricultural production and be familiar with the various agricultural establishments near the school as well as the distinctive characteristics of the work in the kolkhozy and sobkhozy where the school youth brigades work.

The methods applied in the rural schools to forge the link between basic science teaching and work are founded on (1) the pupils' class work in physics, chemistry, biology and mathematics, (2) their work with plants, animals and farm machinery in the course of their practical work and experiments on the school plots, and (3) their participation in production work in the kolkhozy and sovkhozy in their brigades.

The application of their knowledge of physics, biology and chemistry enables the pupils to get a better grasp of the working principles of internal combustion engines, the role of chemical fertilizers, the principles of agricultural mechanisation and the technology of agricultural cultivation.

The tasks the teacher sets his pupils must be accompanied by instructions on the working methods to be used. The instructions are intended to help the children to carry out the job on their own. The children are thus brought gradually to work independently.

Experimental work is an important feature of polytechnical education and training for work in rural schools. Experimenting develops a creative attitude to agricultural work, develops the pupils' perceptive faculties and helps them to enlarge their knowledge of basic science and learn how to apply research methods.

The content and methods of the experimental work are related to the age of the pupils. In the primary classes they do their first experimental trials with growing seeds and plants; they observe the change in the growth and development of the plants. They also try their hand growing tuberous and leguminous plants.

In the fourth to seventh years, the pupils' agricultural work on the school plots still has an experimental bias. They learn how to grow plants by doing simple experiments. The results they obtain are of course standard in agricultural science and avant-garde practices (they have not yet had the necessary training for their work to lead to any new discoveries). The pupils in the terminal classes already have some experimental work experience and they try to find solutions for new problems of import to agricultural progress, from both the production and the scientific points of view.

The value of this experimental work depends on a number of factors. It is most important that it should be planned with an eye to increasing the production in the kolkhozy and sovkhozy.

It is equally important to see that all the necessary equipment is available, that the pupils are adequately supervised by qualified personnel and that the results achieved are checked and taken into account later on.

The experimental work should be so planned that the pupils are encouraged to work independently. They should take part in the selection of the work projects; they must learn to derive basic theory from their experiments, write up their own technical records, plans and diagrams. The pupils are divided into small groups or teams for this experimental work; each team is expected to complete on its own the full series of tasks planned.

One of the most important tasks in the polytechnical education of the rural pupils is to ensure that they have adequate opportunity to assimilate up-to-date techniques in cultivation and animal husbandry.

In this connection, the experience of a large number of rural schools in the Krasnodar and Kujbyšev districts and 60 schools around Rostov, as well as many others, deserves attention. In these schools pupils in the fifth, sixth, seventh and eighth year classes show a keen interest in mechanised agricultural techniques. Under their teachers and experienced tractor drivers they are given the opportunity to become familiar with the construction and use of tractors and learn how to couple up seed drills and use watering equipment. They learn the skills needed for mechanised ploughing, sowing and harvesting operations. Many of them finally find employment in one of the many mechanised farm operations.

In a number of rural schools ("Zarja Kommunizma" in the Moscow area, "Gul'keviči" (Krasnodar) and "Samarskoe" (Rostov)), pupils study tractors as well as cars. This is an experiment which is showing good results.

The organisation of training for work is more difficult in the terminal classes (ninth and tenth years of schooling). Experience over the past few years and research in the schools has, however, led to the development of courses in practical work (praktikum) on the following themes: tractors, field crops, market gardening, fruit growing, animal husbandry, applied chemistry in agriculture, agricultural techniques, and motor mechanics. This practical work is planned in the light of the pupils' interests and to fit in with the type of production of the farms in the surrounding area, with agricultural production needs, the number of skilled instructors and the types of equipment available. The studies the children have already completed are taken into consideration in planning the programme of practical work: their basic science education, technical and technological studies, practical skills and experience of farm work. Production practice (proizvodstvennaja praktika) is usually done in the course of their brigade or team production work.

Optional courses are arranged for additional training for work. It is multipurpose in character and intended to stimulate the pupils' interest in different agricultural activities. At least two hours a week are allotted for the optional courses (to supplement the practical work or "praktikum") in the terminal classes. The aim is to prepare the children for skilled work, in the first place for occupations in the mechanised agricultural sector: tractor driver, repair and maintenance man, mechanic on stock farms and electrical fitter. A number of laboratory assistants (for applied chemistry in agriculture) are also trained, as well as (daily) production inspectors in charge of filling in the relevant kolkhozy pay slips (četčik-normirovscik).

It is important to note that the practical work (supplemented by the appropriate optional courses) gives the pupils the opportunity to be trained for production work and at the same time to complete their training for a given level of qualification in a given agricultural occupation.

In many of the rural schools in the Stavropol' and Voronez districts pupils can complete their training for work through these and optional courses and end up with a specific qualification: tractor driver, stock-raiser, laboratory assistant, etc. Many pupils after learning a trade at school go on to work in a kolkhoz or sovkhoz.

Many rural general schools will be organising training in basic farm techniques and stock raising, in tractor driving, and the operation of combines and other farm machinery from 1970-71 onwards for their terminal class pupils, the purpose being generally to expand the training of agricultural mechanics.

In the pupils' training-for-work programme and in encouraging in them an interest in agriculture the creative work they do in the study groups for young technicians, mechanics, inventors, naturalists, etc., is of great importance. In these groups the pupils do construction work and invent and make various kinds of appliance to facilitate the work on the farm. The pupils in the rural schools of Krasnodar have built a tractor they call a "malys" and invented a new type of apparatus for measuring humidity in seeds and soil and the fat content in milk. They have also built a training machine for learning tractor driving and plant for conveying manure in the animal husbandry section of a kolkhoz.

The pupils' "inventions" are of real practical value, but this is not the main point. The important thing is that, through their work of rationalisation and their creative spirit and inventiveness these young people are developing a technical turn of mind, stimulating their interest in modern agricultural methods and being prepared for work with farm machinery.

To do work that is of benefit to the community is also of great importance in the pupils' training for work. This is mostly organised by units within the Komsomol (Young Communists Movement) and the pioneer groups. The children help the kolkhozy and sovkhozy meet their targets on time; they take part in the campaigns to stop soil erosion, look after public parks and gardens, etc., do forestry jobs, help create urban green belts, collect medicinal herbs, work on nature conservation, etc. Of course this socially useful work is integrated with their training for work in general and their education for agricultural activities.

The class teachers (Klassnyj rukovoditel') and other teaching staff, school heads and managers of kolkhozy and sovkhozy all have a part to play in rationalising the pupils' work for the community and ensuring its educative effect on the youngsters. It is vitally important to determine the precise objectives of the tasks, see that they are properly planned and organised and put into operation, ensure that all the pupils are involved, supervise them and see that their achievements are made known to and appreciated by the public.

One of the main objectives of the schools is to give the pupils enlightened vocational guidance and prepare them for choosing their future careers in full knowledge of the facts.

The ways and means and methods of providing vocational guidance for the pupils are many and varied: familiarisation, in the course of their training for work, with the various occupations and branches of production; basic science study; discussions with class teachers and other teaching staff; visits to agricultural undertakings; meetings and lectures on relevant topics; opportunities to work at centres for young technicians and naturalists; their practical work for the benefit of the community and the various forms of liaison between the school and production undertakings, and with pupils' parents; use of press, cinema, television, radio and printed publicity material, etc.

Vocational guidance bureaux are set up in the schools. The role of their training for work in agricultural production is of special importance in steering the pupils towards work in the kolkhozy and sovkhozy.

Experience and research show the following to be the most important factors influencing pupils in the choice of an agricultural occupation:

- training in work attitudes from a very early age;
- lessons in agricultural technology in their fifth year class;
- work with machinery;
- production work in the pupil teams or brigades;
- experimental work;

- creative technical work in study groups;
- the example of parents, well-known engineers, teachers and specialists in agricultural work;
- the prestige of agricultural occupations in the community;
- the modernisation - industrialisation - of agricultural methods;
- the rise in the educational level and material conditions of life in rural areas.

The general secondary education the pupils get in the rural schools and the polytechnical nature of their preparation for work in modern agriculture enable them, when they leave school, to work in other branches of economic activity, while continuing to study if they so wish.

The work that they do in their production teams or brigades is specially important both for their vocational guidance and for their training for work. The first such brigade was set up in 1955 in the Stavropol' district. Soon afterwards there was a vast extension of the movement in every region and republic; their value has been conclusive and widely approved, and they have become an effective means of educating rural children and organising their training for work.

In the Russian Federation alone (RSFSR) there were 2 million schoolchildren enrolled in the brigades in 1969.

The strength and vitality of the brigades, and their value derive from the contribution they make to achieving the main objective of education of the young: their preparation for playing an active part in building the new society.

The facilities needed by the brigades - equipment and land - are provided by the kolkhozy and sovkhozy. The brigade is one of the vital links in the system of education and training for work of the rural school.

The Marxist-Leninist principle of relating education to productive work is the basic idea behind the brigade. It links school and education with life itself, and with the work of the kolkhozy and sovkhozy. Linking education with work on the land is one of the principal factors in the harmonious development of the pupils, their acquisition of moral qualities and preparation for making a well-informed choice of future career.

The brigade is primarily a work unit which the pupils join to carry out productive work for the benefit of the whole community. Its educative value is immense: the pupil helps to create material goods for the community while the people's tradition of working together has an educational impact. Working together for the good of the country, the pupils become aware that their work is of service in the common cause, the building of a new society. It develops in them an interest in practical activities, the habit of work on the land, and a liking for this work; it teaches them how to work well, imbues them with conscientiousness, collectivism, the spirit of mutual help and other qualities needed for the new society.

The operational base of the brigade is generally a camp set up somewhere in the fields. Here there will be light buildings containing a laboratory for applied chemistry, lecture room, recreation room, a camp kitchen where the pupils prepare their meals; a roofed-over canteen; tents, caravans, or special dormitory facilities. There will also be tractors, combines, seed drills and other machinery allocated to the brigade, and every camp will have suitable arrangements and premises for recreation, rest and leisure activities. The equipment is supplied by the kolkhozy and sovkhozy and the pupils help to set it up. The camp facilities do not call for any great expenditure: its principal riches will be the abundance of green spaces and the flowers the children grow, the good country air, the nearby forests, rivers and lakes.

Each brigade consists of a number of groups which may be either "multipurpose" or "specialised". The pupils are drawn from the seventh, eighth and ninth year classes, and occasionally from the fifth and sixth years as well. At the head there is a pupils' brigade council and a "pupil-brigadier". The Komsomol unit and self-government brigade institution are called upon to encourage to the maximum application the principles of independent work and sustained effort in all the pupils' farm and socio-political activities.

The daily life of the brigade, its work and recreation follow a set pattern. The first half of the day is devoted to work: 2 to 6 hours, according to the age of the pupil; the output norms are similarly decided on an age basis. The pupils stay in the camp for 2 to 6 weeks.

The pupils' production work (proizvodstvennaja, praktika) is also based on the brigade system. It consists mainly in production work, work with machinery, agricultural experimental work, specific tasks, rationalisation and technical innovation.

It has already been pointed out that one of the main objectives of polytechnical training for work is to give the pupils skills in tractor driving, use of combines and other machinery. Their training in these jobs is done in the brigades, under the instruction of experienced teachers, mechanics, tractor drivers and machine operators. The pupils learn new methods of mechanised cultivation. The result is that many of them afterwards choose jobs connected with agricultural mechanisation. In recent years, for example, 127 pupils of a general school in the Voronez district have obtained Category 3 tractor-driver mechanic certificates. A general school in Kazakhstan trained over 300 agricultural machinery operators through work in the brigades.

The experimental work done by the brigades is certainly very useful in developing in the pupils a critical and innovative attitude to agricultural work, but it has immense important for agricultural production as well. Here is a typical example.

The experimental work of a general school (the "Kostenskaja") is very well-known and highly esteemed throughout the Voronez district and beyond. The local kolkhoz has assigned 75 hectares of arable land for the work of its brigades. Experimental work has been going on there since 1958, in trials of different species of wheat, maize, beans, peas and buckwheat, and particular attention is being given to studying the effects of organic and mineral fertilizers and micro-elements.

The kolkhoz is proud of the pupils' achievements from their experimental work, which is basically a matter of scientific research. The brigades have succeeded in growing new types of wheat, giving a higher yield, which have since been plantedin the kolkhoz fields. They grow seeds for the use of the kolkhoz. The youngsters have studied the soil composition over an area of 3,000 hectares and advised the kolkhoz on the most suitable fertilizers for wheat, sugar beet and maize.

Being able to apply in actual production the results of their experimental work is a powerful incentive to the pupils to do creative work in agriculture.

Experimenting, technical innovation, learning about the achievements of innovators - all are exciting activities for school children, impelling them to further study and the acquisition of practical skills but also a generally high level of education.

While going about its practical work for the community, the brigade does not neglect artistic and other activities and the need for recreation. Every day after the meal and rest, the children take up the leisure activities they like. They read newspapers and books and discuss things together. In their study groups, they are specially keen on technical innovation. They play chess, sing, dance and play musical instruments, do sports - volleyball, basketball, football. They hike and go swimming, fishing, etc.

Gatherings are arranged between brigades, and meetings with local avant-garde agricultural workers and representatives of the artistic world. There are shows and artistic performances and sports competitions.

The traditional "spring festival" and the "first furrow", tree-planting, harvesting and work celebrations are fascinating occasions for the children. The adventurous style of life and work in the brigades delights them and is one of the reasons why the brigades are so popular. Whoever becomes a member of a brigade stays in it for the rest of his school-days, and many of them keep in touch long after they have left school. The brigade has a positive influence on its members that they feel throughout their lives.

It is very important, however, that the educative work of the brigade should be linked with the instruction given in the school during the rest of the year; it must, in fact, constitute a continuation of that education.

Experience in the general school of the village of Homatec (in the Poltava district) has shown that the brigade is an excellent means of education and that it hardens the young farmers-to-be in preparation for the fatigue of their work. The first brigade there was started seven years ago, and in the last three years, 56 pupils have gone off to work in the kolkhoz immediately after finishing their schooling. They work as team-leaders, mechanics, cultivators and stockmen. There are 45 specialists at the kolkhoz, and all of them are former pupils of the Homatec school.

The brigades have supplied the kolkhozy and sovkhozy of the USSR with hundreds of thousands of trained mechanics, stockmen and cultivators. In Kazakhstan, for example, thanks to the work of the brigades and to a rational organisation of training for work and the placement of rural schoolchildren, more than 40 per cent of the school leavers from the rural general schools in the years 1966 to 1968 have stayed in the Republic to work in the kolkhozy and sovkhozy. And as they have been trained for individual, creative work, many of these former pupils have become known as innovators and avant-garde agricultural workers.

Expansion, strengthening and improvement of the brigades are the factors that will make for improvements in education and training in attitudes to and orienting the pupils towards work on the land in the kolkhozy and sovkhozy.

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Working Paper on

ORGANISATION OF AND METHODS USED IN TRAINING FOR WORK FOR PUPILS OF A GENERAL EDUCATION SECONDARY SCHOOL

by

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"Training for work" (trudovoe obučenie) in a general education school may be regarded both as a subject to be taught and as an educational process in the widest sense, where the pupils engage in practical activities under the direction of a teacher.

The present report deals with the methods used to give training for work its character of an educational process in this latter, wider sense. A universally accepted psychological principle served as the point of departure: i.e. the human being is moulded and developed in the course of appropriate activity. It is our view, moreover, that training for work is an integral part of the whole educational process and for this very reason must be founded on the achievements of Soviet educational theory.

According to Soviet educational theory, teaching is defined as the practice of different types of activity of the teacher and the pupils, under the teacher's direction, with a view to having the pupils acquire a given amount of knowledge. For every type of activity the various methods of instruction are selected by the teacher according to the pedagogical objectives set. The content of the instruction, its objectives and methods determine the choice of the form to be given to the actual instruction.

The methods applied in training for work have been determined in the light of the conditions peculiar to this type of training:

(a) the lessons in training for work may be arranged in schoolrooms, laboratories, school workshops, the grounds of experimental agricultural schools, training bays in industrial plants or in production training workshops, or in the production shops themselves and on the farmlands of the kolkhozy or sovkhozy;

(b) the pupils' activity in the course of the lessons is planned so that they not only will acquire new ideas and knowledge but above all will more easily acquire practical abilities and skills and, at the same time, produce actual material objects of some utility;

(c) as regards source material to be studied by the pupils, particular importance is attached to real life objects such as working implements, materials, machinery and apparatus, and to technical processes such as assembly and fitting;

(d) training for work comprises a series of stages, during some of which considerable weight is given to individual teaching;

(e) the main objective of the education received by the pupil in the course of his training for work is to inculcate and develop in him the inherent qualities of an avant-garde worker in a socialist, communist society;

(f) the guiding role in the education and training process does not belong exclusively to the teacher but may equally well be fulfilled by an engineer, a technician, an agronomist or a skilled worker.

Methods used in training for work

Classification of the methods used must necessarily be somewhat artificial, since in practice each method is usually used in combination with others. For example, in giving the pupils instructions, use is made of explanations, demonstrations or the presentation of the actual objects being studied; teaching aids and models are used, and demonstrations of practical work motions; recourse is had to technical books and papers. During practical or laboratory work, the pupils are given written instructions, refer to manuals or textbooks, have direct guidance from the teacher, carry out experiments, solve technical problems and observe objects and phenomena.

There are differing points of view as to the appropriate classification of the teaching methods used. Educationists are disposed to classify the methods according to criteria such as the source from which the pupils' knowledge is derived, the objectives of the training, or the type of procedure on which the teacher's and the pupils' activities are based. A classification based on a number of criteria together may be admissible. Whatever principles may be adopted, the objective is to help the teacher to choose and apply judiciously the most suitable methods in the context of the actual conditions under which the lesson is being given.

It is our opinion that the most suitable classification is according to the objectives to be achieved in the course of the training for work. It is vital, however, to bear in mind the special characteristics of the objects and processes being studied.

There are seven principal objectives to be achieved in the course of lessons for training for work.

1. The acquisition by the pupils of new knowledge on the principles governing the operation and construction of technical equipment.

2. The acquisition by the pupils of new knowledge of the principles governing technological processes and the actual functioning of these processes.

3. Formation in the pupils of the practical skills and abilities involved in handling technical material and equipment.

4. Formation in the pupils of the practical skills and abilities involved in performing technical operations.

5. Familiarisation of the pupils with the principles of the organisation and economics of production, of mechanisation and automation applied to production, of work organisation and the operational content of the trades most commonly practised.

6. Encouragement of the pupils to do socially useful work, and production work in particular.

7. Testing the knowledge, practical skills and abilities of the pupils.

It must of course be understood that these seven objectives do not occur in isolation. Moreover, in practice other objectives, more concrete and specific, will come to the fore. But these latter objectives can always be ranked below the general objectives set out above.

By the "acquisition of knowledge" we mean the action through which the pupils learn about or become familiar with new ideas - both independently and with the help of the teacher - and learn to understand and deepen their knowledge about them. The process of acquiring knowledge implies an oral exposition and demonstrations by the teacher, and practical exercises and independent work by the pupils. This process must not only enable the pupils to assimilate thoroughly the required knowledge and skills, but also, which is very important, accustom them to using methods which will permit them to add to their stock of knowledge and skills thoughout their future studies and working life.

"Formation of practical skills" means the process of preparing the pupils to perform a given operation (or series of operations) rapidly, precisely and intelligently. The process implies active work on the part of the pupils themselves (observations, consultation of technical data, practical exercises, etc.), under the supervision of the teacher (explanations, demonstrations, hints, correction of mistakes, etc.).

By "formation of abilities" is meant a complex process of deepening and perfecting practical skills with a view to developing the pupil's ability to perform certain operations automatically.

Familiarisation of the pupils with production work and occupations is a multipurpose polytechnical activity. In general, it is based on interviews, visits to plants, projection of films, slides, etc.

Integrating the pupils into socially useful work must, we believe, go hand in hand with the process of inculcating practical ability and skills. Work done individually by the pupils while on technical jobs is of particular importance in this connection.

Assessing the pupils' knowledge, ability and practical skills goes on throughout the training for work lessons, but it may at certain stages become the main feature of a lesson. The teacher's observations and his discussions with the pupils alternate with special tests of both theory and practical work.

Our experimental work in training for work applied to schoolchildren and an analysis of our experience in this field have provided a basis for a classification of the methods and teaching procedures used in this training. It has been established in relation to the objectives of the lessons. This classification is reproduced below.

CLASSIFICATION OF METHODS AND TEACHING PROCEDURES USED IN TRAINING FOR WORK

Basic methods and teaching procedures	Principal objectives						
	Acquisition of new technical knowledge	Acquisition of new knowledge in technology	Formation of practical skills and abilities in handling technical equipment	Formation of practical skills and abilities in performing technical operations	Familiarisation with production work and occupations	Participation in socially useful productive work	Assessing the pupils' level of knowledge, practical skill and ability.
MAIN TEACHER ACTIVITIES							
Oral presentation	+				++		
Explanation	++	++	++	++	+	+	
Lecture					+		
Discussion group	++	++	+	+	++		+
Demonstration of experiments	++	++	+	+			
Presentation of objects studied	++	++	++	++	++		
Demonstration of practical teaching aids	++	++	++	++			
Presentation of technical documentation	+	+	++	++	++	+	
Demonstration of work motions	+	+	++	++		+	
Presentation of films, slides, etc.	++	++		+	++		
Oral tests	+	+					++
Written tests	+	+					+
Tests of practical work			+	+		+	++

MAIN PUPIL ACTIVITIES							
Individual observations	++	++	+	+	++	++	+
Reading and preparing technical documentation	+	+	++	++		++	
Textbook work	++	++			++		
Problem solving	++					+	++
Experiments	++	++					
Exercises with technical equipment	++	+	++	+		++	+
Practice in using the materials and teaching aids given out to the class	++	++					+
Practice in the required motor skills	+	+	++	++		++	+
Note taking and précis writing	+	+			+		
Self-assessment	+	+	++	++		++	++

The ++ sign indicates that these methods are particularly well adapted to the corresponding objectives.

The + sign indicates that the method, while adequate, is of more limited value.

How training for work is organised

According to Soviet educational theory, the practical organisation of lessons of training for work is governed by various factors: the number of pupils, the place and timing of the instruction, the order in which the pupils' activities take place, the processes used by the teachers to direct these activities.

As a general rule it is organised in classroom lessons. But a lesson in training for work differs from lessons on social and political subjects, the sciences or mathematics since it has certain inherent features which are the direct result of the conditions (referred to above) under which this training takes place.

Lessons in training for work may be arranged in three different patterns depending on the number of pupils involved: the class lesson, i.e. the same for the whole class (frontalnaïa); through the organisation of small groups or teams of pupils; through individual tuition.

In the class lesson the pupils do work which is exactly the same in nature and content for each of them. Such lessons may be organised for the whole class (35 or 36 pupils), but it is more common for the class to be split into two equal groups. The lessons usually last an hour and a half, with a half-way break of 10 to 15 minutes. There are three main types of class lesson:

(a) mainly theoretical: the pupils study the operating principles and the construction of materials and equipment, principles and procedures in technical processes, basic elements of economics and production organisation, etc.

(b) development of practical skills and abilities; the pupils learn how to handle technical materials and equipment, to use appropriate methods and processes for technical operations, to manufacture socially useful objects;

(c) study visits to plants: the pupils become familiar, through observation and interview discussions, with production work and with different trades.

At any stage in the course of lessons modelled on these three patterns, some other form of organisation may temporarily be adopted - teamwork or individual tuition - but these latter forms are more usual when the object of the lesson is practical work on a specific task (tematiceskij praktikum) or practice in production work (proizvodstrennaja praktika).

Work in small groups is likely to be organised for some particular topic in the syllabus after the pupils have studied the corresponding theoretical data and been initiated in the practical skills involved. Practical work on particular topics will take up several successive training for work lessons, in the course of which the pupils will cover a planned series of practical exercises (including laboratory and production work) for that particular part of the syllabus. The teacher divides his class into small groups of two or three pupils. For each group (or team) one pupil is designated team leader. If possible the number of teams should be the same as the specific tasks to be practised. Each team will successively carry out all the specific tasks, according to a rotation plan devised by the teacher. At any given time, therefore, each of the teams may be working on a different task. Consequently each task will have to be accompanied by separate instructions in writing.

The work plan (see table below) must be brought to the pupils' attention in advance: it should be posted up in the central methods planning office of the school or the school workshop, together with a list of the specific tasks in question.

It should be pointed out that from the point of view of educational practice it is much more usual to adopt the class lesson method for teaching practical work than any other method.

The class lesson pattern of instruction makes it easier to establish the relation between theory and practice and to follow a logical order in acquiring abilities and skills, in passing from the simple to the complex, from the known to the unknown, from what is easy to things that are more difficult. Practical work arranged in this way, however, calls for a great deal more equipment than the system of group work by topic. It is for the teacher to decide, in the light of local conditions and facilities, how the practical work should be arranged for any particular phase of the syllabus.

Table of a practical work scheme

Team no.	Date and job number							
	I.II	9.II	15.II	22.II	1.III	8.III	15.III	22.III
I	1	2	3	4	5	6	7	8
II	2	3	4	5	6	7	8	1
III	3	4	5	6	7	8	1	2
IV	4	5	6	7	8	1	2	3
V	5	6	7	8	1	2	3	4
VI	6	7	8	1	2	3	4	5
VII	7	8	1	2	3	4	5	6
VIII	8	1	2	3	4	5	6	7

For the production practice, the pupils are divided into teams or they may work individually.

Training for work lessons may take place in school classrooms, workshops or in undertakings (plant visits or production work).

The time allocated to these lessons is 2 hours a week during the school year and 6 hours a day during production work periods. All training for work lessons are an integral part of the school timetable.

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It is the teacher who decides the order in which the pupils' activities are to be organised in training for work lessons. According to the methods he chooses, he prepares an appropriate work programme for each lesson: individual work, application of safety rules and safe work habits, etc. Both the teaching methods and their application are carefully planned in advance by the teacher.

In selecting the methods for giving the training for work and deciding on the best way to apply them, the teacher must take into account all the conditions governing the whole educational process.

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Working Paper on

THE ORGANISATION OF EDUCATION IN A WORK and RECREATION CAMP

by

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- How should the children be grouped?
- What shape of plot should be groups be set to work on, broad or long and narrow (broad plots are more difficult for the children to work and long narrow strips more difficult to supervise)?
- How could the children best be introduced to the system of mutual supervision?
- What arrangements would be best for the rest-breaks - should all the children have them together or should they take them by groups?
- What should be done with the individual pupils or groups who finish their jobs ahead of time?
- How should the pupils whose work was of a low standard be dealt with? and so on.

Several years of experience has enabled us to work out the general educational requirements to be applied to the organisation of the children's collective work in sections, groups, etc., in this work and recreation camp.

The teacher's job is to make sure that the following conditions are fulfilled:

- the children must understand the basic objectives of the community work and the best way to achieve them;
- the system of organisation must be suited to the nature of the work and, at the same time, fit in with the educational purpose;
- the work must be equitably distributed and the tasks within the children's capacity;
- appropriate instructions must be given for the children's guidance;
- work standards must be set as regards time, stages to be followed and key points determined; the group is the vital work unit;
- positive attitudes to the work must be inculcated;
- health and safety rules must be observed;
- in the interests of the work a psychologically favourable environment must be created; instructions must be given to the pupils to improve the standard of their work;
- the tasks and responsibilities must be allocated so as to get the children to supervise each other.

The teachers have noted a number of interesting facts in connection with the "work semestre" (trudovoj semestr) in the summer camp. The pupils in the top classes at school who had gone to the work and recreation camp were more active and took more interest in the social problems of the school. They took a close interest in the work programme and knew how to analyse it and plan its implementation. During lessons they were more attentive than the pupils who did not go to camp and were readier to carry out their teachers' recommendations for independent study, and to work out the most suitable conditions for their work both at school and at home. In other words, they showed more interest in learning and, in particular, wanted to get a grasp of the bases of scientific work organisation.

Points were awarded in the competition on the following basis:

Work			Timetable				Behaviour				Group activities				Sports		Results
% of norm achieved	Quality of work done	Work organisation rating	Reveille	Physical training	Spare time	Lights out	Service	Aesthetic quality of life	Neatness of clothing	Attitude	Rural club	Within the camp	Attendance	Innovations	Training	Competitive sports	Records.

The most useful sort of competition in developing the pupils' civic sense is one which reflects the aspirations of our society in the USSR, and of all workers everywhere, and forms part of the national competitive movement. This is the type which stimulates the youngster to break records, not just for his personal glory but for the good of all. The children are proud of their group's successes and throw themselves, body and soul, into their work for the greater benefit of the whole camp community.

There are some special features about the process of allocating jobs in a summer camp. In our camp, "Youth", the procedure is as follows: the Council of Organisers first meet to hear the group reports and then plan the jobs for the next day; each group is told what it will have to do and the best way (the recommended way) to share out the work among the members; each group is given its own work schedule and the key points to observe in doing it. An appraisal of the work done is announced by the camp director to the children at evening roll-call before the children go off to their club activities. Next morning, after breakfast, the pupils are lined up for general assembly and told about their tasks for the day, and each group is told what it has to do. Then all the pupils are given brief general instructions; specific instructions and demonstrations are given later at the work site (e.g. how to harvest the cabbages or cucumbers). The children are given a list of the jobs. When the work is finished, they go to the sobkhoz representative who immediately gives an oral appraisal, corrects and advises on how to do the job better. The group leader fills in the "work register", which the agronomist or agricultural technician visas, comments on the quality of the work.

From the very beginning of the camp work, the teachers found they were faced with completely new educational and organisational problems. The educational value of the children's work in the camp depended on the teachers' finding the right answers. The following are just some of these problems:

Recreation organisers:

- organise staffing and roster of camp clubs;
- organise meetings and group activities, cinema outings, radio broadcasts over the camp loudspeakers; bring out the camp wall-board newspaper;
- organise cultural activities in the village rural youth recreation centre.

In guiding the activities of the camp organisers we have tried to avoid having the discussions lapse into mere generalities; we want them to make concrete proposals. In the camp headquarters the motto is "When discussing - say what you want!".

We have found that knowledge of the principles of work organisation has a very positive impact in helping the children to develop their organisational ability and their attitude to the work. They become more aware of the importance of the jobs they have to do, try to plan the stages in its accomplishment, analyse their own progress and apply rational methods.

Competitiveness, provided it is carefully planned from the educational point of view, has a positive influence on the children's activity. It makes the children participate more actively in the various tasks and encourages them to appraise and analyse the work process.

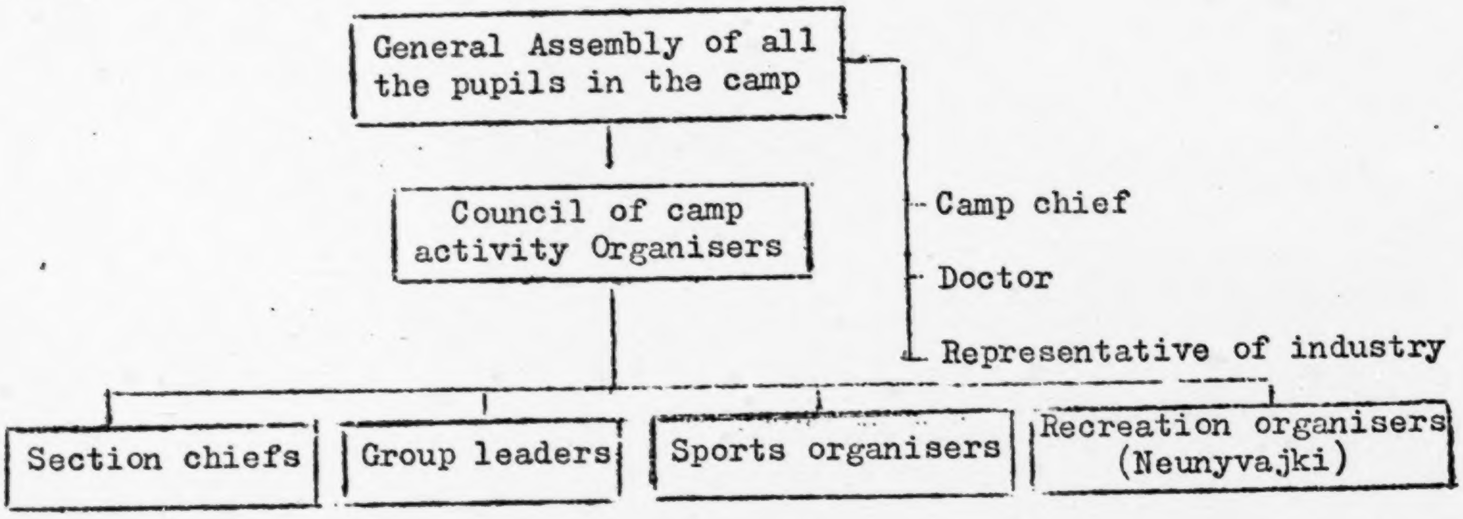
Competitions are organised at three levels in our youth camp: between the groups, between the camp and the sovkhoz youth group, and between our camp and another one nearby. Each group is given a "work register" (trudovoj pasport) in which are entered: the amount and quality of the work done by the group, and whether the organisation of the work is good or not so good.

Competition between the pupils has had to meet certain pedagogical requirements. One of the most important is the extent to which, quite apart from the actual manufacture of a particular item, the competition develops in the children new practical skills and abilities or refines the skills they already possess.

Applied to work performed in a youth camp a competitive system must reflect the basic objectives of the camp work.

The motto we have adopted for our competition is:

"If you don't know - we'll teach you,
If you can't do it - we'll help you,
If you won't - we'll make you".


General Assembly of all the pupils in the camp
Council of camp activity Organisers
Camp chief
Doctor
Representative of industry
Section chiefs
Group leaders
Sports organisers
Recreation organisers (Neunyvajki)

What are the functions of these units and leaders?

The General Assembly meets once a week to: approve the work programme; welcome new arrivals or expel camp offenders; modify the work programme; stimulate and encourage the group activities or impose sanctions; allocate funds.

The Council of Organisers:

- draws up the daily schedule;
- receives the organisers' reports;
- supervises the running services and the implementation of the work plan;
- organises both the work and sports activities;
- supervises the catering and health of the camp;
- keeps a record of the competitions.

Section chiefs:

- allocate group tasks and responsibilities;
- assess work of the sections and their reports;
- supervise the sports and recreation organisers.

Group leaders:

- allocate tasks to group members;
- supervise the running of camp facilities;
- to keep a record of work tasks;
- directly supervise the children's work.

Sports organisers:

- organise morning physical training;
- supervise the hygiene of the camp;
- organise competitions and hikes.

outstandingly analysed by A.S. Makarenko. He took the view that any child community develops a system of correlations in the pattern of mutually accepted subordinations among elected and nominated bodies of the community. A community bond cannot develop without constantly active child community self-management patterns.

The works of outstanding Soviet educationists are a mine of valuable suggestions for our work with young people in the schools. P.P. Blongskij, for example, has shown how individual capacity for self-management can be developed in every child. Mrs. N.K. Krupskaja has written on the link between training in organisation skills and the proper organisation of child community self-management, the latter bringing out the aptitudes of children for community effort.

Research workers have recently brought to light some of the traits characteristic in the personality of the leader of a group informally constituted by the children themselves (informalinaja gruppa). A questionnaire among school children showed that the qualities they looked for in their "leader" were, above all, to have:

organising ability	61%
courage	36%
the respect of older comrades	32%
skill at sports	29%
energy	26%
intelligence	15%
resourcefulness	11% [1]

The replies show that organising ability is highly esteemed by the children themselves. It is a quality which can be developed, in particular, by directing their activities through creating situations calling for reciprocal recognition of subordination and authority.

In planning the camp self-management system, care was taken to see that the activities called for the direct participation of every child in the life of the camp, and that the distribution of jobs gave every individual the chance to solve problems in the daily life and work of the community. A self-management structure had to be found that would give every pupil in turn the opportunity both to take organising responsibility and to accept subordination to authority in the productive work of the camp as well as in sports and services, etc. The pupil self-management structure set up by the members of the Committee of the Young Communist Movement (VLKSM), together with the director of the school, corresponded to the different types of camp activity.

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[1] Cf. "Sovetskaja pedagogika", No. 10, 1968, p. 35.

After this preparatory work, which gave them self-confidence, the pupils in the senior classes started to draw up work projects to be carried out at the camp.

They selected general as well as more specific objectives:

- to plan the agricultural work in such a way that the pupils would be able to make use of what they had learned at school;
- systematically to integrate all the pupils in work for "socialised production" and teach them how to work as a community;
- to develop a liking for farm work;
- to train the pupils in the practical skills needed to organise work on a systematic basis;
- to develop, through work experience, character traits important throughout life - a serious attitude to work, accuracy, orderliness and concern to avoid waste;
- rational use of working time and time off;
- to help boost the sovkhoz farm output;
- to prepare the children for living in a community and for team work in production.

Naturally the pupils having a hand in organising the camp were guided by their teachers, who helped them work out the basic principles for the activity of the camp: collective work for running the camp (waiting at table, cleaning, etc.), work, sports, group cultural activities in the camp and in the neighbouring village, clubs and group activities, excursions, open air games, hikes, security guard and supervision.

The basic formula for the work at the camp was:

1. The task. Model rules. Timetable (both work and rest).
2. Allocation of duties and responsibilities. Self-management.
3. Over-all plan of arrangements for work, classes and sports.
4. Competitions. Celebrations.

An important facet of the camp work plan was the preparation of the schedule for work and rest. In this camp, "Youth", the pattern of collective living is laid down in a weekly and daily timetable for every type of activity.

The pupils' life and work were designed to develop the children's capacity to manage their own affairs. In Soviet society, people who can organise their own and their comrades' work, and who show initiative, conscientiousness and judgement in solving common problems, are highly esteemed. We are convinced that, under youth camp conditions, development of the desired self-management ability depends on the educational content of the work projects and the self-management infrastructure.

Nowadays schools pay a good deal of attention to finding suitable patterns for self-management in the organisation of the daily tasks: new types of arrangement are being thought out and new structures set up, but often without suitable adaptation to children's activities. The main features of self-management in child communities have been

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There has been a vast expansion in work and recreation camps for urban schoolchildren in the USSR as effective educational institutions.

Directing the educational work and life of the children in a camp and supervising their health and cultural development, all have their special individual facets.

When our local camp, "Youth", was set up, most of the organisational problems were dealt with by the pupils in the top classes. The preparatory work, the camp life and activities for the children, from their first day at the camp until the end of the season, were all planned in advance.

The first stage of preparatory work was to train camp leaders from among members of the Young Communist Movement (Komsomol). In the course of a number of special seminars, the camp leaders studied the general requirements for the organisation of community work. They were taught that every kind of organisational activity calls for preliminary thought, clarification of aims and objectives, planning of the work to be done, wise distribution of staff and "manpower", and consideration of the ways in which each pupil's personal contribution to the community effort can be stimulated. The youngsters also took note of the experience of other camps in the USSR and made their own independent analysis of this experience.

They chose to collect the basic information wanted through a series of surveys, and during the seminar they learned how to use this sociological tool.

Before they proceeded to draw up their plan, they were informed of the general exigencies in the planning of collective work. They worked out a detailed analysis of the sequence: "outline, appraise, amend, complete".

The "outline" stage calls for indicating the steps to be taken and the stages in their realisation. In connection with the allocation of people, functions and responsibilities, it is vital to provide for systematic appraisal. To amend the planned steps gives the over-all scheme, in the words of these young people themselves, "life and flexibility". Study of their own experience in the school komsomol unit showed them that the adaptations needed could be of the "running adjustment" type and applied in stages (i.e. over a given period). The youngsters learned that supplementary measures have to be decided with due regard for the basic plan, that the plan must take into account incentives of a social and individual character, and that any plan, before it is finalised and put into operation, calls for preparatory work such as the study of previous experience, the defining of objectives and decision as to the proper organisational steps for its achievement.

The pupils participating in the planning had to assess the chances of successfully carrying out the measures projected in the light of existing conditions. They learned how to formulate objectives and determine the most favourable conditions for solving the problems of the collective task.

The camp life has left many happy memories with the pupils. One of the group leaders, Vladimir G., wrote to the school during his military service:

> "The time I spent in camp is something I specially remember. It helped me to settle down in the army more easily than some of the others. Reveille, keep-fit exercises, self-assessment and community service - these are all things I learned a lot about in my three years at the camp. I strongly recommend all our youngsters in the Communist Youth Movement to take the camp work very seriously, not to slack and be soft ... Habit becomes second nature, they say. Good work habits not only make life easier for a man - they give him the chance to make it a finer thing..."

The leading question in a questionnaire put to the pupils in the camp was: "what have you enjoyed most at camp?" The answers were unanimous: it was the feeling of becoming independent for the first time, the satisfaction of earning something through their work, the feeling of self-respect that had been acquired, the knowledge that they had learnt to work properly. One boy wrote: "The most important thing for me was that, for the first time I felt grown up and independent."

General conclusions

The educational value of the work at the camp lies mainly in the development of initiative in the pupils and in the realisation of the educational opportunities present in the actual process of doing useful work. The pupil develops an aptitude for creative inquiry and the character traits essential for his active participation in the life of a community. The children begin to understand that their work is of real value and a necessary contribution, however modest, to the common effort. The work in camp strengthens the pupils morally and brings out in them practical skills and abilities that are useful to the community.

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Working Paper on

THE ROLE OF ESTABLISHMENTS OUTSIDE THE SCHOOL IN THE DEVELOPMENT OF INDIVIDUAL APTITUDES OF CHILDREN IN THE TADZHIK SOVIET SOCIALIST REPUBLIC

by

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The Soviet national education system provides an education combining intellectual wealth, moral purity and physical perfection. This objective is attained in common by the school, the family, out-of-school establishments for children and social organisations.

It is generally recognised that the varied aptitudes and interests of the pupils often go beyond the subject matter included in education programmes. Great importance is therefore attached to the activities of establishments outside the school whose main objective is to complete the education of children and adolescents with the help of an extensive network of groups, laboratories, associations, clubs, sports clubs etc.

The activities of these institutions, closely linked to those of the schools that train and educate the young generation, help pupils to choose their future profession wisely. Before the great socialist revolution in October 1917, there were no establishments outside the school for children in all Tadzhikistan. Today, there are 145 such institutions: 62 scouts and pupils groups, 9 clubs for young technicians, 5 clubs for young naturalists, 5 excursion and tourist clubs for children, 8 playgrounds, 5 stadiums for children, 11 film libraries and 40 sports clubs for children and adolescents. Over 1,000 groups and laboratories numbering 53,000 pupils are combined in these institutions. Work is directed by 1,100 organisers, specialised in organising mass activities for children and young people.

Furthermore, in all general schools (standardised schools with 8-year periods of study and secondary schools covering the 9th and 10th years of study) there are numerous groups and clubs of subjects either of a technical nature, or for nature study, for excursions etc. Most school children belong to such groups and clubs; membership is optional according to taste and interest.

Such extra-school activities are run by methodological and organisational centres such as: the young technicians central institute, the young naturalists centre, the childrens' tourism and excursion centre, the sports institute of the Tadzhik SSR and the Tadzhik SSR film library.

Sixteen laboratories have been set up in the young technicians central institute for: electrical engineering, radio construction, cine photography, making of national musical instruments, automation and cybernetics, building of technical models (for the younger pupils), photography, chemistry and technology, wood work, heat studies , model ship building, model rocket building, model automobile construction, model agricultural machinery, plastic arts and also a cinema studio for young people.

These laboratories are so run that the pupils may choose whatever activity most interests them, may complete their theoretical knowledge and acquire practical skills in the chosen field. Leading groups from the technical groups usually participate in competitions organised on republic and inter-republic level.

Public education institutes make every effort to provide the technical groups and laboratories in schools and other institutions with modern equipment.

The work done by children and young people in the technical laboratories of non-school institutions has a determining influence on their choice of profession. Many of the present leaders of technical groups are former students.

Much attention is given to the work of photography and cinema groups. For example since the creation of the photography laboratory of the pioneers and schoolchildren's group of the town of Dusanbe, it has trained over a million young photographers.

Young cine enthusiasts from the young technicians centre are now showing great interest in the construction of the Nurek hydro-electric plant and have contact with the best workers, the engineers and technicians. These young people have made a film on the new book on Nurek which has been shown in schools. Young painters and model builders from this centre have built a model of "little Nurek" from photographs and sketches. (They show the engineer's view of this grandiose project, as well as the beauty of the countryside, the power of the mountain river that is to be harnessed by man to work for the economy of the country.) The builders of the model won a prize at the exhibition of national economic achievements.

The young cine enthusiasts receive considerable help from the national Tadzhik film libraries and municipal film libraries, which possess 5,227 copies of 825 educational films. These film libraries have worked on 4,010 film shows in one year.

In Tadzhkistan very old works of art are to be found. These are of great interest to the young people. At the young technicians central institute a laboratory for the repair and rebuilding of national musical instruments has been created. This is the only laboratory in Central Asia where children study, rebuild and design national musical instruments. They build 65 different instruments from various regions of Tadzhikstan (Darvaz, Kara-Tegin, Langar, Badahson). New musical instruments have also been built in this laboratory and the work has been shown at international exhibitions of the children's work (in the United States, Iran, Afghanistan, Canada and Japan). Many boys and girls are inspired by the work of this laboratory in the choice of their future career. Of 100 former pupils of general schools who worked in this laboratory, 30 became specialised instrument builders and others went to the arts faculty of the Dusanbe Pedagogical Institute.

Laboratory work at the young technicians centre helps to develop qualities of precision, industriousness and patience in the pupil which are indispensable in every profession.

For example, the work involved in building a model ship which is made up of a hundred parts requires various materials and tools and takes a long time. It is quite a job to understand the drawings, prepare the parts, assemble them, pay attention to the aesthetics of the model, adjust and test it. Preparation of parts requires a great deal of patience and precision. Having completed such a task (model of a ship or aircraft), the young person will have acquired skills that may be used in several professions.

Many children and adolescents are interested in the animal and vegetable world of nature. They are able to follow up these interests in the young naturalists groups and laboratories and in the appropriate sections of the pioneers and schoolchildren's groups as well as in the young naturalists groups in general schools.

The young naturalists central institution has laboratories, for horticulture, viticulture, agriculture, market gardening, flower growing, genetics and selective breeding, processing of agricultural products, protection of nature, poultry farming, rabbit breeding.

Work in such groups and laboratories broadens and improves knowledge acquired by pupils in botany and zoology lessons, gives them the required skills for agriculture and animal husbandry. They also learn to carry out experiments and observe which helps to develop an interest in agricultural production and gives them a love of nature.

Work in the young naturalists section of the pioneers and schoolchildren's group of the town of Kuljaba is well organised. A group of 60 pupils work in an orchard, an experimental field and farms for rabbit and poultry breeding (chickens, ducks and geese). In order to economise land the young naturalists graft various species of fruit onto one tree (they may make up to 80 such grafts). Various species of wheat grow on the experimental field, one of which, the so-called "branched type" has ears like those of maize, other strains of wheat may produce up to 60 shoots with ears. As part of their experiments, the young naturalists have developed a drought-resistant species of wheat which gives a yield of 17 quintals per hectare without watering and whose grain is twice as big as an ordinary grain. This species of wheat which was grown on the group experimental field was later sown on a surface of 400 hectares on collective farms.

During the past year, about 3,000 young naturalists groups operated in schools and in other institutions comprising over 40,000 pupils. The young naturalists participate actively in gardening, making of flower displays, protection of nature, and help adults in agricultural work.

The young naturalists central institute works in close co-operation with the scientific research institute of the Science Academy of the Tadzhik SSR and the national botanical garden. This institution makes methodological recommendations on experimental work for schools and other institutions, for children, organises competitions in work study, maintenance of experimental fields, growing of the best flower displays.

Exhibitions are held every year in the various towns and regions of the Republic showing the work done by students on the experimental plots belonging to the schools, this helps to improve the work of the young naturalists in schools and other institutions. Their work is also exhibited regularly in national economic shows in the Tradzhik SSR and the USSR.

The boys and girls who belonged to young naturalists' groups later go on to work in various branches of agriculture, or continue their studies at higher or secondary-level agricultural institutions.

The most widespread of such extra-school institutions for children are the pioneer and schoolchildren's groups, which have technical clubs, art clubs, applied arts clubs, needlework and chess clubs. The field of activity of such groups and their number depends on the interest manifested by the children and young people.

In the Dusanbe pioneers and schoolchildren's centre there are 53 different groups comprising over 4,000 participants. Among these there are technical clubs (building of model ships and aircraft, radio techniques), artistic clubs (choir singing, dancing, drama, symphony orchestra) as well as young naturalists groups still and cine photography and drawing. Girls are keen to attend the needlework groups: dressmaking, embroidery, knitting.

An art club has been created at the pioneers and schoolchildren's centre in Dusanbe and artistic events of various kinds are organised, so that the children may develop their gifts and talents.

In many of the establishments outside school for children, as well as in the general schools groups have been set up where the children learn to play chess, as this game currently plays an important role in the cultural life of society.

Among the establishments there are also sports clubs for children: 42 of these comprising 22,392 pupils have been organised according to the principles laid down by the Ministry of Education, 8 further schools with 2,016 pupils operate according to recommendations made by the trades union organisations and sports associations.

The Tadzhik SSR is known for the great variety of its countryside, fertile valleys alternate with high peaks; beautiful rivers, lakes, glaciers, springs abound, vestiges of a glorious past of battles and labour are to be seen. The best means of showing the points of interest of Tadzhikistan and the work of its people is by organising excursions.

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Activities for the promotion of excursions and tourism are of great importance from the point of view of health and as regards the acquisition of knowledge. Such activities are therefore greatly encouraged in all schools and other institutions for children. There is an old proverb: "it is better to have seen with one's own eyes once, than to have been told ten times". The truth of this saying is confirmed during excursions.

Tourist resorts and excursion centres for children organise this type of activity. Children from all regions of the Tadzhik SSR and neighbouring republics come there in leisure time. From such centres they go hiking or make excursions, often outside the boundaries of the republic. In order to encourage young people to participate, badges are handed out ("young tourist", "tourist of the USSR") as a reward. Every year meetings of young tourist ethnographs are held.

Such excursions are much frequented by children interested in geology, archeology, botany, zoology, meteorology and geography. Experience and knowledge gained by children on such excursions prove useful when it comes to a choice of professions.

The following conclusions may be drawn from the above.

1. The establishments outside the school with their various groups laboratories and clubs help to expand school activities by developing individual capacity and aptitudes in children and young people. They also help to broaden and deepen the knowledge, capacity and skills of children according to their tastes and aptitudes.

2. The work done by children and young people in the groups and laboratories of such establishments is of great social value, as it awakens interest and develops a love of work, of sciences, arts, sports, nature and helps in the choice of a suitable career.

3. The success of the education given children and young people by their establishments depends on the pedagogical methods applied which should take the child's age and child and adolescent psychology into account.

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Working Paper on

SYSTEM OF PLACEMENT FOR YOUNG PEOPLE IN THE RUSSIAN FEDERATIVE SOVIET SOCIALIST REPUBLIC

by

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Conditions in Russia favour manpower training - the systematic planned preparation of the skilled personnel needed for the different branches of "socialised production" (obscestvennoe proizvodsto). When the economic plans are drawn up, the manpower needed to achieve the national development targets is estimated and the sources from which it can be drawn worked out.

One of the main objectives of the USSR Five-Year Development Plan is to ensure the efficient use of existing manpower resources in every region and to facilitate a start in working life for the young people completing their education in the general schools.

Youngsters reaching working age are more and more becoming the main source of manpower to cover the needs of the national economy. The economists' projections suggest that between 1971 and 1975 more than two-thirds of the demand for skilled workers will be met by the recruitment of young people leaving the general and vocational schools and higher education establishments. The problems of their placement are every year receiving increasing attention, from both the economic and the social point of view.

More than a million young people complete their education every year in the RFSSR. The number who go on to the various industrial and other undertakings, the kolkhozes and sovkhozes, with a full general secondary education, is increasing all the time.

Questions related to their general and vocational education and their integration in the socialised production system are in the front rank of national preoccupations and are minutely planned, since their solution is the key to efficient utilisation of manpower resources.

The RFSSR annual State Plan, as in all the other republics of the Soviet Union, covers the intake of young people into various forms of study and training and their placement in employment. A primary guideline is to direct them into further study of some kind, especially those who have not had a secondary education.

The RFSSR Plans provide for statistics to be established for each autonomous republic, region and territorial subdivision showing the number of young people for whom employment has to be found in each town, district, undertaking, etc. This principle of placement planning is the basis for their organised integration in the economy.

Young people always find places, as the demand for manpower is usually higher than the supply. The following are the principles on which school leavers are placed:

- assuring them full employment in socially useful work;
- supplying the manpower needs of the various branches of the economy for young workers;
- improving the training of young workers within the undertaking, individually, in teams, and through training courses.

Placement plans are drawn up for the republics, regions and other subdivisions by "Gosplan" (the Planning Commission of the RFSSR), in co-operation with the State Committee for Manpower of the Council of Ministers of the RFSSR. This joint effort is based on the division of youngsters in the terminal classes of the general schools between entering employment and continuing their education, as worked out by the planning committees and local manpower planning bodies.

The placement plans call for a series of carefully prepared measures to be put into operation.

To rationalise the placement of young people, the State Committee has made regulations for the placement of pupils leaving the general schools, either on completion of their classes or before completion. The Regulations, as approved by the RFSSR Government, define the steps to be taken by the local Soviets of workers' representatives, the economic institutions, educational and vocational and technical training establishments and other bodies concerned.

According to these Regulations, the placement of school leavers from the general schools is organised by committees specially set up by and subordinate to the Councils of Ministers of the autonomous republics and the Executive Committees of the Soviets. The members of these committees include: representatives of the Party, of the trade unions, the Communist youth organisations, economic institutions and the education and vocational and technical training establishments. The representatives of the Manpower Planning Committee act as vice-chairmen of these committees.

The committees work in close contact with the permanent committees of deputies for youth affairs which are attached to the local Soviets of workers' representatives and deal with the organisation of the integration of school leavers in "socialised production".

At present, the actual engagement of the school leavers is mainly arranged by the manpower-use institutions, following a pre-arranged scheme.

The youngsters are directed to undertakings, sovkhozes, kolkhozes, etc., by the manpower planning bodies and the placement committees in the light of recommendations forwarded by the school, based on the trades taught in the course of their training for work (trudovoe obučenie) at the school, the wishes expressed by the pupils and their parents' views.

Youngsters sent into industry are given "routing slips" (putevka) under a system arranged by the State Committee for Manpower Planning of the RFSSR.

The pupils who have asked to go into productive work on completing their schooling are handed these "routing slips" by delegates of the manpower planning bodies on a special occasion (usually the school prize-giving).

Obviously the manpower planning bodies make every effort to ensure full employment for every youngster. They are required to take into consideration the youngsters' aptitudes and interests, as well as the manpower needs of the economy in every district, town, region, etc., and each autonomous republic as a whole. In the case of youngsters leaving the eighth (the last) grade in the basic common school, the effort is made to facilitate their admission to a ninth-year class (the first of the general secondary schools) or to a vocational school.

In 1969, the activities of the manpower planning bodies have directed young people to branches of the national economy where manpower needs were particularly acute.

The worker delegates of these institutions have close contacts with the regional undertakings (including the sovkhozes and kolkhozes) and work out proposals for the best way to plan the placement of the youngsters and submit them to the Executive Committee of the local Soviets. The delegates obtain lists of the pupils in the terminal classes from the schools and in co-operation with the social organisations endeavour to ensure full employment for all boys and girls leaving school.

In the rural districts, they encourage the setting up of courses for tractor driver-mechanics in the sovkhozes and kolkhozes, in view of the growing need for agricultural mechanics.

Social and economic development in the USSR is making proper training of young people for employment, in the light of the demands of scientific and technical development and the need for skilled workers for the national economy, of ever-increasing importance. Preparing the youngsters for a right choice of a future career is an educational task and economic measure of the highest importance. Raising productivity and replacement of the older generation of the working class by young skilled personnel depend on it. A right choice of occupation is also a factor of primary importance in the development of the young person's personality. Great attention is attached, in the USSR, to the psychological and moral preparation of young people in the general schools for the productive work they will be called upon to do for the good of the community.

In recent years experience has been accumulated in the participation of the manpower planning bodies in vocational orientation and preparation of the young for work in industry, transport and telecommunications, building, agriculture, commerce and services. This activity is necessary for the proper distribution of the school leavers among the branches of the national economy which need young workers.

The delegates of the manpower planning bodies in the towns and regions are sent forecasts (by the undertakings, sovkhozes, kolkhozes, etc.) giving details of the trades, number of jobs and working conditions for the young recruits. These details, of course, refer to the trades (common to the various branches of production) open to young people in the types of undertaking concerned under the legislation in force. The undertakings also indicate what facilities they have for training the youngsters and improving their educational standards.

The data are then collected for each town and region by the local manpower planning bodies for each branch of the economy and each trade. To do that one should base oneself on the scientific and technical requirements of each trade and work out the total numbers required for trades common to a great number of economic branches taking into consideration the prospects of expansion in the economy and each trade. This work is done in close liaison with the planning committees.

The collected data are then communicated to the education authorities, to be used in vocational counselling for the schoolchildren. On the basis of this information, the schools organise a massive year-round vocational orientation campaign among the pupils.

Sociological research has shown that the main reason for this migration is the youngsters' ambition to pursue their general education and qualify for a trade as soon as possible, which is not always so easy in the villages.

Provided it is kept within reasonable limits, this movement from the country to the town is indeed necessary. But one of the decisive factors in the development of the villages is the contribution young and well-educated workers, able to master the new techniques and technology, can make to agriculture. Rural youth is a social force that can contribute more than anything to transforming village life, bridging the gap between farm work and industrial work, making it possible to achieve the targets of economic reform and raising the cultural level of the rural environment. The shortage of young people on the sovkhozes and kolkhozes handicaps the training of skilled labour for the major agricultural trades - cultivator, mechanic, stockman, building worker.

Over the past few years, a series of measures has been implemented to improve the material income of rural people and improve their standard of living. The system of "guaranteed payments" has been introduced in the kolkhozes, together with old-age pensions, and the terms of payment for machine operators improved.

The average level of wages in agriculture has gone up considerably. This has improved the prospects for training a sufficient number of skilled workers, especially mechanics, among the young people now completing school. Plans have been established for providing the rural young with agricultural training. Completion of these plans will put the new agricultural techniques, largely deriving from industry, in the hands of well-educated young workers.

The manpower planning bodies work hand in hand with the school teachers, Party organisations, trade unions, Young Communist groups and the sovkhozes and kolkhozes to promote appreciation for farm life and interest and respect for the agricultural trades in the minds of the rural schoolchildren. The manpower planning delegates supply information on the working conditions, the demand for skilled workers, the prospects of expansion. To be successful, the pupils must be systematically oriented towards these vocations and suitable conditions for their training and subsequent productive employment must be provided; and their leisure must be catered for.

Experience shows that the environment in which he grows up has an important influence on the rural youngster's interest in his future choice of work.

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Meetings with specialists and outstanding workers in agricultural production, with former pupils of the schools working in the kolkhozes where they were born, telling the pupils about the plans for developing their village and their kolkhoz and the posts which they will be able to occupy, are all measures likely to encourage the youngsters to take up this kind of employment and stick to the land. In many regions of the RFSSR special allowances are paid to pupils who go to work in the kolkhozes when they leave school; they have guaranteed wages, the living conditions of young married couples are provided for, and scholarships awarded for further education.

All these are part of the daily activity of the local manpower planning bodies on behalf of the rural young people.

The undertakings recruiting the youngsters prepare their welcome long in advance, along with arrangements to ensure their rapid integration in the working community. This is a characteristic feature of the USSR's placement policy for young people.

To ensure the satisfactory placement of school leavers, undertakings have to reserve for them a proportion of between 0.5 and 10 per cent of their total jobs. Most of the youngsters go through training courses for the various skilled trades in the different branches of the economy before taking up work. Those who, with the approval of the undertaking, enter a full-time course are paid 50 per cent of the wage for the particular trade or level of qualification envisaged. Conditions are particularly favourable for youngsters learning to be mechanics, building workers, stockmen or cultivators.

The young people who come along with their "routing cards" (issued to them by the manpower planning committees) to the undertakings in the rural areas are placed in the "vanguard" workshops or the leading "brigades", and they are helped to become proficient in their trades.

The young recruits to production are brought up to understand the experience of the innovators and the principles that are traditional in a worker's community. The oustanding workers and permanent staff take an interest in them. They enjoy the best conditions for improving their standard of education, learning specialist secondary or higher-level skills. All appropriate measures are put in hand to encourage youngsters who combine work and study.

The new young workers learn the rules of the establishment, are given the necessary safety equipment and working clothing and footwear.

The manpower planning bodies supervise the fulfilment of all the regulations concerning young people's employment - the provision of suitable conditions to enable the youngsters to accomplish productive work, continue their education and training and organise their leisure time and life in general. All these factors contribute to the vocational adaptation of the young.

These inspections are planned in advance by the young people's placement committees jointly with the delegates of the manpower planning bodies. Each inspection is preceded by appropriate organisational measures. First the undertakings which can receive the young workers, in accordance with the placement plan, are chosen. Then the working supervisors are trained to carry out the inspection, following carefully defined objectives. The inspection is controlled, as a rule, by the committee, with the participation of representatives of the management of the undertakings, kolkhozes, sovkhozes, etc., on the basis of past results. Reports are made. Plans are drawn up to remedy any deficiencies found and their implementation is subsequently supervised by the local manpower planning bodies.

The Supreme Soviet of the USSR adopted a basic labour law of the Union and the Republics in July 1970. All the fundamental enactments were codified in a single Labour Act, regulating the work of employees and manual workers. The regulations were considerably amplified and elaborated to conform to the present conditions of "socialised production" and with the demands of scientific and technical progress.

The new Act provides for guaranteed remuneration, improved working conditions, measures to encourage the workers by both material and moral benefits, privileges for those who improve their qualifications, etc.

A section of this important enactment is devoted to youth employment. It bears witness to the care and attention given to the younger generation who are growing up to strengthen the ranks of the working class, the prime productive force in our society.

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Working Paper on

OUT-OF-CLASSROOM WORK IN VOCATIONAL TRAINING ESTABLISHMENTS, AS A MEANS OF PROMOTING THE YOUNG WORKER'S ALL-ROUND DEVELOPMENT

by

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dealing with Vocational Training (in Moscow).

This year, the whole of progressive mankind has been celebrating the 100th anniversary of V.I. Lenin's birth. The great leader and teacher presided over the birth of the Soviet vocational training system. The Marxist-Leninist principle that training shall not be divorced from productive employment, V.I. Lenin's speech "The Tasks of Youth Unions", at the Third Session of the Komsomol, form the foundation on which training is based. V.I. Lenin's ideas about Communist education are developed, and given concrete form, in the moral codex bequeathed by the Builder of Communism, and enshrined in the programme of the USSR Communist Party.

The Soviet Government, in solving the problem of the education and vocational training of the younger working-class generation in its millions, regards this not only as the basic way towards the planned and organised reinforcement of the national economy with qualified workers, but also as one of the means whereby the technical and educational level of the young people of our country can be raised.

The vocational training establishments are called upon to turn out highly-qualified young workers, fully up to date in their technical skills. These young people are to be brought up in the spirit of Socialist patriotism and proletarian internationalism, and are to be unreservedly devoted to their mother country.

The courses given in our vocational training establishments are designed to ensure the harmonious physical and mental development of trainees. Qualified teachers assist the latter to display their particular talents and to make the most of them.

In our country the Communist Party and the Soviet Government are continually concerned with the vocational training system. For vocational training purposes, the Government sets aside not only modern equipment, tools, instruments, textbooks and audio-visual aids, but also facilities for sports and music-making, and for reading. The money set aside for such purposes is very considerable.

Particular attention is given to improvement of the methods whereby the ideological convictions of young people are strengthened. They are taught carefully to preserve, as a sacred legacy, the revolutionary and labour traditions of the working class, and are trained in the spirit of internationalism and international friendship.

The first task of all is to provide the future worker with a basically scientific outlook, comprising a coherent system of philosophical, political, legal, moral and aesthetic views, convictions and ideals.

A whole complex of educational and training work is designed to produce this scientific outlook. The names of the subjects taught in the general curriculum are significant in this respect: "Civics", "Political Economy", and "Aesthetic Education".

As regards general subjects, the trainees are taught the unique historical significance of the Great October Socialist Revolution. They are acquainted with the social and economic transformations brought about under the leadership of the Communist Party since the Soviet system was established. They study the rights and duties of Soviet citizenship, and the revolutionary, martial and labour traditions of their mother country. They are taught about the radical difference between the Socialist and the capitalist approaches to production. The economic laws governing production are studied, together with the rudiments of industrial and agricultural economics.

By such means, the trainees learn something about the laws governing the development of society and the major developments of the present day. They become acquainted with the social and political structures of the Soviet State and of other countries.

For the teaching of these subjects, excellent classrooms are provided, equipped with audio-visual aids and other technical equipment.

At the same time, boys and girls are busy on all sorts of out-of-class activities. All the teachers are expected to lend a hand. In this fashion, they penetrate deeply into the mental world of each trainee and make use of the particular interests and talents of the boy or girl concerned, to develop love of work and love of the particular occupation chosen, and to develop the trainee's gifts and inclinations to the fullest degree.

The development of the trainee's technical creativity in out-of-school hours plays a big part in inducing love of the chosen occupation and a creative attitude towards employment.

The vocational training schools are very well equipped for this. Children are busy on such things in the technical circles of training establishments, in Houses of Technique and in the technical sections of the Houses of Culture of the individual republics.

In vocational training establishments there are some tens of thousands of circles of technical creativity, in which trainees are regularly busy. Several thousand primary branches of the voluntary All-Union Association of Inventors and Rationalisers have been set up, and operate, in vocational training establishments.

The trainees' best productions are systematically exhibited every year in municipal, district, republican, All-Union and international exhibitions (Paris, Brussels, Montreal, Osaka, in the United States, England, etc., etc.).

An All-Union exhibition of work done by trainees in vocational training establishments (works of art as well as technical products) was held in the summer of 1968 in the central exhibition hall near the Riding School in Moscow. Some 210,000 people visited the exhibition, amongst them the heads of ministries and departments of enlightenment and culture from the Bulgarian People's Republic, the German Democratic Republic, the Democratic Republic of Viet-Nam, the Polish People's Republic, the Mongolian People's Republic, Czechoslovakia, the Syrian Arab Republic, Pakistan, the United Arab Republic and many, many other countries.

In 1969, every second trainee in the vocational training system took an active part in the All-Union Exhibition of Young People's Technical Creations. During the exhibition they made several tens of thousands of proposals, of which some 10,000 were adopted and introduced, thereby saving, in the process of production, something like 1 million roubles.

In Moscow, at the Exhibition of National Industrial Achievements, there is a permanent stand "Vocational Training" at which the most outstanding ideas, inventions and products produced by trainees and teachers are demonstrated.

The trainees in vocational training establishments take an active part in exhibitions called "The Technical Creations of Young People", organised by the Central Committee of the All-Union Leninist Communist Youth Union.

The builder of space vessels, Academician Korolev, and many another famous person, has begun his career in the technical creativity circle of a vocational training establishment.

The connection between class and out-of-class activities is provided by the general tasks and problems tackled in the classroom and in out-of-class activities. The teachers attempt to train their pupils in the art of acquiring knowledge for themselves, and to induce them to extend and deepen what they have learnt in secondary schools and in our establishment.

Interest in learning, the ability independently to acquire knowledge, are an important condition for the intellectual growth and development of the individual. Hence we demand of the vocational training instructor and teacher that he should know how to excite the interests and emotions of his pupils, and discover new ways of increasing their interest in acquiring knowledge. All sorts of circles exist in our schools - historical, technical, exploratory, etc. - and they play a part of incalculable importance in this process.

As propaganda for knowledge and to explain the necessity thereof in practical life, talks and lectures are regularly given on the part played by science and technique in the life of man: "Electronics in the Service of Mankind", "Mathematics in a Worker's Work", "Chemistry Around Us", etc. Series of lectures are also given on the specialised occupations for which trainees are being trained, and on future developments of the branches of industry for which they will be working.

But it is not enough merely to talk about awakening an interest in knowledge. Our teachers try to get their pupils carried away by science and technology, and to this end try to surround the process of acquiring knowledge with an aura of romance. "To Read is Interesting and Important", "At Your Service (journals and books)", "Everybody should Know This" - such are a few of the slogans encountered in our vocational training schools.

The most important task which we require our teachers to perform is that of producing moral convictions in their pupils.

Instructors, foremen, and public organisations endeavour to produce such qualities in the trainees as fairness, honesty, truthfulness, modesty, tact, attention, respect for old people, women and children.

At the same time, certain other moral qualities, universally appreciated in our society, are inculcated, such as love of one's Socialist mother country, an honest attitude to toil for the good of society, a concern for the maintenance and increase of the common patrimony, collectivism, comradly mutual assistance, friendship and brotherhood among the peoples, intolerance towards national and racial hatreds, brotherly solidarity with the workers of all countries, and so on.

In such time as is not taken up with study, and in the winter and summer holidays, our pupils undertake excursions and make journeys for the purpose of recuperation from their labours. They visit the scenes of revolutionary battles during the Great October Socialist Revolution, they visit imposing public works, such as hydro-electric stations, factories and the like, meeting people of note, such as those who defended the Soviet way of life from foreign intervention, or those who today are rendering our country famous by peaceful constructive toil. During these wanderings, the pupils take notes, make films, and collect precious relics. On their return to school they create museums, rooms devoted to a record of the revolutionary, martial ardour and fame of the Soviet nation. We consider that participation in such excursions constitutes an excellent school of patriotism and an education in love for the mother country.

Education in patriotism is inseparably bound up with education in internationalism. Our teachers try to organise their work in such a fashion that boundless devotion to country goes hand-in-hand with a desire to reinforce friendly relations with the working youth of all countries.

V.I. Lenin used to attach great importance to the education of young people in a spirit of proletarian internationalism. It was important, he thought, that they should be stalwart opponents of militarism and nationalism. His ideas provide the foundation for the international education of young people, including the young people trained in our establishments.

Many of our educational establishments are collective members of societies for friendship with other countries. Thus, the Moscow vocational training institution maintains permanent relations with thirty-eight countries. This makes for a better acquaintance with the life of young people in other countries, while reinforcing unity and proletarian solidarity.

In most of our vocational training establishments it has become customary to organise, once a year, an evening devoted to friendship with some foreign country. Evenings are organised, for example, in accordance with some theme: "Shake Hands,Distant Comrade!", "We're with You,Vietnam!", "Towards a World without War" "If Young Fellows throughout the World ...", "Young People Sing a Song of Friendship!". Such slogans call for peace and friendship, and reinforce hostility towards national and racial discrimination. Besides which, a tradition has sprung up whereby meetings of young future workers with foreign delegations are organised.

The education of the trainees in the spirit of internationalism is based on socialist humanism, and on respect and affection for the working masses. It is based on hatred for oppressors, and those responsible for social ills and injustice.

The aesthetic sensibilities of our trainees are systematically developed. We are endeavouring to ensure that the younger members of the working classes should possess a well-developed aesthetic sense in relation to the surroundings in which they work and in relation to the things of everyday life. Our children are given an introduction to the treasure house of the world's culture, and to the best in the realms of art and literature.

Hence a course called "Aesthetic Education" is given in vocational training schools. The curriculum consists of three basic subdivisions: (1) the aesthetics of labour and production; (2) the aesthetics of behaviour and everyday life; and (3) aspects of art.

The first of these has to do with the aesthetic aspect of production, of tools and implements, and of products. The second includes ethics, day-to-day living, how to dress properly and how to occupy one's leisure. The third deals with literature, the graphic arts, music, the theatre and the cinema.

A special textbook on aesthetic questions has been published for vocational training establishments. Every effort is made to improve the qualifications of those who give these courses. These teachers are provided with all necessary advice as regards teaching methods.

A great deal of activity goes on outside the classroom. In the republics, regions and districts, there are Halls of Culture, choirs and dance troupes made up of pupils in technical training establishments. In the establishments themselves there are clubs and societies in which those interested in the arts can practise at will. One third of all pupils in such establishments are members of such societies or clubs. The Halls of Culture in the republics and districts offer direction and leadership, make suggestions as to repertoire, and offer the leaders of such clubs and societies an opportunity of increasing their skills.

The Halls of Culture and artistic clubs maintain a constant link with composers, poets and other artists. The Ministry of Culture of the USSR has issued a special decree whereby educational establishments are assisted in securing aid from artists and the like.

These clubs and societies of amateur artists are continually giving concerts to working-class audiences. They also travel abroad. Thus, for instance, in the last few years troupes made up of the members of such clubs and societies have successfully demonstrated Soviet amateur art in Bulgaria, Yugoslavia, Italy, Japan, Austria and other countries.

The name of Evgeniya Miroshnichenko - a People's artist of the USSR and one of the stars of the Shevchenko opera and ballet theatre in Kiev - is known far and wide beyond the borders of the Soviet Union. She is a former pupil of a vocational training college, and started off as an amateur in the local club.

Belles-lettres play an important part in the aesthetic education of trainees. For this purpose, too, the vocational training establishments are well equipped. In all of them there are at present libraries, stocked, in the aggregate, with several million volumes.

Thanks to all this, teachers and instructors are able to concentrate in systematic fashion on the cultural education of their pupils.

In these establishments, physical training is an integral part of the educational process. It plays a role of capital importance in fitting a young worker for his job. Basically, physical culture is given in a twice-weekly class.

A special feature of the physical training courses given to boys and girls in vocational training schools is that the programme extends from one to four years. Besides which, some 60 per cent of instructional time is spent by the pupils in workshops and factories, in fields and on construction sites. Hence physical training is required, not merely to ensure all-round physical development, but also to turn out sturdy, healthy young workers, able to cope with the jobs assigned to them. Their health and productivity very largely depend on the physical training they have received and the sports they have taken part in.

The large-scale physical and sporting education of trainees in vocational training schools is undertaken by physical culture teams belonging to a voluntary sports organisation with branches throughout the Soviet Union: "Labour Reserves", as it is called. The organisation possesses sports equipment in large quantities, together with stadia and football fields, courts for basketball, volleyball and tennis, swimming pools and gymnasia.

This All-Union organisation, "Labour Reserves", has been responsible for training the holders of European, indeed, world records. Mention might be made of Tamara Shimanskaya, European rowing champion, Lyudmila Catchcalda, world champion in 1967 and prize-winner in the 1969 world championships for artistic gymnastics, Danny Pozdnyak, boxing champion at the XIXth Olympic Games, Anna Dunders, holder of world records in the realm of light athletics, and many others.

Soviet teaching methods are based on the assumption that the education of the rising generation should be undertaken by the community for the community.

In our view, not every educational establishment and not every educational group is a community in this sense, i.e. an association able to educate its own members. A real, full-blooded educational community involves a solid organisation of all participants, united by a common end and by some common, socially useful activity. It must also possess its own organs of self-management. To be effective, it must show consistency and resolution, a high degree of discipline, plenty of initiative. It must command confidence in its members. There must be harmony between individual interests and those of the group. Work with trainees is a highly skilled occupation, inconceivable unless the teacher encourages initiative in his pupils.

The most important thing a teacher has to do is to create a real education "collective", a community. This the teachers try to do as soon as the trainees arrive to begin their studies. But in our educational establishments such work has its peculiar features. We get adolescents and young people who already have some experience of what it means to be a member of a community. But backgrounds are far from uniform; not all the trainees come from the same type of school. Here, first of all, they have to take cognizance of their rights and obligations as members of a working community. They have to be prepared for life and work in the community. The whole process has to be compressed into a relatively short period: one to four years.

We would assign a decisive part in the creation of a real educational community to those public organisations which carry on educational activities. Chief amongst them are the Komsomol and the trade union movements. These are independent organisations, with elective organs of self-management. They give the teachers valuable assistance in developing a sense of discipline, devotion to the chosen occupation, and so on.

Every educational establishment has its instructional programme, drawn up in consultation with the public organisations mentioned above.. This is ratified in the organs of self-management of the organisations in question and in the teachers' council at the establishment. Representatives of the organisations are members of the council and take a close and constant part in discussion of all major problems. In their turn, teachers and instructors attend discussions on questions of principle at meetings of the organisations, and actively assist the organs of self-management in all they do.

In this fashion, the close contact maintained between teachers and instructors in the vocational training establishment with the teaching organisations, together with the contacts maintained between the organs of self-management of these organisations and the teaching community, help to create a genuine educational community.

The instruction young people receive in educational establishments offering vocational training not only enables them to undertake productive work in employment, but also ensures their further development. Hundreds of thousands of ex-vocational training school pupils have proved innovators, or have given a lead, in production, or are now in charge of big plants and factories. Many of them wear the medal of a Hero of Socialist Labour, or have received a Lenin or state award, or wear other orders and decorations.

We are exceedingly proud that Yuri Gagarin (the first man in space) and Pavel Popovitch, another spaceman, began their careers in our training establishments.

All this because the Soviet vocational training school does not rest content with turning out skilled workers. It endeavours to bring about an all-round development of the trainee's personality, combining spiritual riches, moral uprightness, and extreme physical fitness.

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Working Paper on

THE ROLE OF OUT-OF-SCHOOL WORK IN AGRICULTURAL EXPERIMENTATION AND TECHNICAL CREATIVITY IN CHILDREN'S EDUCATION AND TRAINING FOR WORK

by

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The problems that have to be faced by Soviet schools today are: relating the syllabus to real life, training workers fitted to combine physical with mental effort and psychologically preparing the children for work in the new conditions of modern industry and agriculture. It is practically impossible to solve all these problems solely in the context of school education.

Work outside the classroom and school opens up wide prospects for developing the children's education, training for work (trudovoe obučenie) and vocational guidance. It is precisely during this time out of school that the child has the opportunity to follow his own interests, try out his abilities and experiment without being continually supervised and without having to work to a strict timetable.

Soviet schools have a great deal of experience in developing children's creative interests, capacity and aptitudes through the technical work they do. Most of this work is done in "circles" or clubs for young builders, mechanics and technicians, school construction groups, technical and scientific societies for young chemists, physicists, mathematicians, etc. These are voluntary groups where the children follow their own initiative, but which are usually closely linked with undertakings, kolkhozes or sovkhozes or with scientific institutes or universities. These organisations suggest topics for the group's creative and "research" activities and give them tasks to perform suitably matched to their capacities. The children mostly do these jobs very well, and the mere fact of knowing that their work is useful and necessary and that the things they make (models, mock-ups, small appliances and machines for demonstration purposes) are put to practical use is a powerful incentive. In the course of their work, they broaden their polytechnical horizons and pick up constructional and "research" skills, etc.

The creative technical work the children take on in their clubs and circles reveals their growing interest in electronics, automation and cybernetics. The members of the young technicians' groups take a part in fitting up school laboratories and workshops, preparing the material, putting together teaching machines, models and mock-ups, etc., for demonstrating automation and cybernetics techniques. Their interest in the new technologies is also shown in the rapid spread of "Young cosmonauts' clubs", where they study astronomy and space flights, make up models of spaceships, rockets, etc.

Work in the circles is phased in four principal stages:

(1) Finding out the children's interests, to decide what circles should be started. This is a matter of giving the children ample information about the different kinds of work the circles can do and explaining in each case its purpose.

(2) Strengthening these interests. The children are shown what has already been done (articles, models, etc.) by other groups in previous years; meetings with former "young technicians" who have finished their schooling, or with members of senior classes are arranged. The aim is to give the children confidence in their own capacities and the assurance that they will be able to do the same kind of thing. They are told about various manufacturing processes and about the achievements of pioneers and leaders.

(3) Expanding their interests. When they are giving out tasks the club leaders explain what skills are needed by a worker doing work of a similar type and what psychological characteristics are necessary for working in those trades. The leaders watch the children at their work and ascertain their individual peculiarities and aptitudes. At the next meeting, they give out the kind of tasks calculated to develop the aptitudes they have observed.

(4) Stabilising interest and developing vocational ambitions. To this end, the leaders try to give the child the opportunity to learn the skills and knowledge needed for whatever type of work interests him (with individual exercises planned for each operating phase), to broaden his theoretical knowledge of the subject (throughout the time he spends in the club), tell him the qualifications required (any contra-indications based on the medical or psychological requirements for particular occupations will be given by a qualified doctor), get him to do jobs designed to develop his mechanical aptitudes, such as the calculations needed to work out a design, changes to be made in plans for different types of assembly work, etc.

The experience of the Krasnodar schools in the development of technical creativeness and vocational orientation of the children is of particular interest. A teaching experiment in developing mechanical aptitudes, with special reference to agricultural machinery, was tried out in 1962 in twenty-five schools in this district. "Young inventors' clubs" were started for children with a penchant for engineering and interested in agricultural technology. Many of them had already studied tractors in the general rural school syllabus.

The work aroused a most lively interest. Competitions were arranged for different groups to work out the best way to make the parts. More and more pupils joined the clubs, and activities were extended along three lines: building small agricultural machines and appliances; building equipment for the school workshops; building apparatus for the undertakings the schools were attached to. There are now more than 7,000 members of these clubs in the Krasnodar district.

Work in the clubs has a tremendous impact on the children's pre-vocational training and occupational ambitions. Large numbers go into the agricultural training establishments or go to work in the kolkhozes or sovkhozes after leaving school.

At the No. 7 General School, in the village of Pregradnoe near Stavropal, there has been a "Young mechanics and technicians' club" for the past six years. It is closely linked with the kolkhoz mechanics' "Road to Communism" club. The members themselves built a workshop at the school with proper ventilating equipment, a radio school and automatic timing devices. They have built machine tools for metal working in the school workshops and "micro-tractors" and "micro-vehicles" for work on the school farm plots. There are now 50 former members of the club working in the village as vehicle or tractor drivers, others are teaching (physical training and training for work) and others are engineers.

The use of internal combustion engine-driven vehicles, tractors, etc. is spreading more and more throughout the country. Knowing how these motors work is a necessity for all the children now completing their general schooling.

In the town of Jaroslavl, the schools have for some years been running optional courses on motorcycles and cars. The courses are based on 100 hours of lessons and 25 hours of practical work. The same programme is used for the work of the club members, and the result is that numbers of pupils have been able to pass their driving tests and become professional drivers. Many former pupils found their knowledge of motorcycles of use to them during their army service.

A "building group" (another type of voluntary society for children) is active at the No. 22 General School at Sverdlovsk. The engineers of a heavy industry plant in the Urals help the young members of this club, who are particularly interested in new technologies. The object is to develop their aptitude for engineering construction. The pupils are keen to build automatic machine tools and to do this they have to study transformer design and construction, electric motors and transmissions of various types. They learn how to handle them, read technical drawings and make sketches and diagrams, etc. They get experience in working with various machine tools and assembly and adjustment. Many of the members have gone on to higher technical education establishments after leaving school. Bringing out their mechanical aptitudes at an early age has been of great benefit to them in their later training.

Another very interesting case is the club work at the No. 8 Common Basic School at Sovetsk in the Kaliningrad district. Here, in a physics-technology group, the pupils are building a task by one of these bodies is of specifically determined economic worth, and it is by no means rare for some new farm technique or new crop tried out by the children later to be adopted by the kolkhozes and sovkhozes in the district.

The help given by the children goes back a long time already. Close co-operation has been built up in the Gor'kij district between the experts and the teachers in the rural schools. The experts of the local agricultural institute have produced a handbook - "Topics and methods of agricultural experimentation for local schoolchildren". This manual is of great help to them in planning their experimental work and heightening its efficiency.

In the Krasnodar district, 200 scientific workers are giving the schools practical help in organising the experimental farm work, including the Heroes of Soviet Labour and Academicians P.P. Luk'janenko, V.B. Puslovojt, Professors S.I. Savel'ev, N.A. Thagusev, A.I. Simakin, Director of the Agricultural Chemistry Faculty at the Kuban Agricultural Institute, etc. The children's brigades in this district have become more or less branches of the scientific research institutes in publicising new farm processes and new crops. The children at the Ivanovskaya (No. 75) General School are currently experimenting with new varieties of wheat, an assignment given them by Academician P.P. Luk'janenko.

A great deal of work with forage crops is being done by the pupils in the schools of the Komis Autonomous SSR, with the active support of K.A. Moiseev (B. Sc. (Agric.)), a scientific assistant at a branch of the USSR Academy of Science.

In 1965 the heads of a number of general schools took part in the Third Symposium on New Silage Crops arranged by the Komis Autonomous SSR Institute of Biology, attached to the USSR Academy of Science. One of these school heads presented his report on his school's work in connection with these crops. A high tribute has been paid to this work by (among others) the Professor at the Leningrad Botanical Institute, who said: "This school is carrying out highly scientific experimental work in agriculture on its school plot, work which might well serve as an example for the country's research stations".

Over the last eight years the children's brigades of a general school in the Kurgansk district have carried out more than forty experimental assignments with fertilizers, seeding processes, etc. at the request of a kolkhoz, an experimental station and the local Agricultural Institute. The children take careful note of the results and report to the kolkhoz.

This same school, in co-operation with the kolkhoz, organises its pupils' training for work with full appreciation of the need to develop a creative approach and a vocational bent; it has provided a large number of competent workers for agriculture. At the moment 120 former pupils of this school are tractor and combine drivers; of the members of last year's brigades, 27 have entered higher agricultural training establishments. Many former pupils come back to work in the district after qualifying in these establishments.

There is a general school in the Leningrad rural district which jointly with its parent undertaking, a sovkhoz, is giving a very effective vocational orientation to its training for work. This goes on from the first to the tenth class year. Its success is due to the organisation of many and varied out-of-school activities for the pupils: young mechanics' and young naturalists' clubs, visits to farms, meetings with shock-workers and farm experts, optional courses, work in young experimenters' groups, the brigades and pioneer detachments. Every facility is provided to give the training for work polytechnical validity: specialist rooms for every type of subject, model farm plots and varied equipment. Out of the school leavers over the last ten years there are now: 202 tractor drivers, 125 drivers, 173 farmers, 56 agricultural chemists; 110 former pupils are working on the local sovkhozes, 29 studying in the Leningrad Higher Institute of Agricultural Studies and 77 in the agricultural technical colleges.

These are just a few examples, which will, however, be sufficient to show the achievements of the school and out-of-school work in technology and agricultural experiment, the role of this work in the education and training for work of young people and in building up a sound moral basis and ambition contributing to a wise choice of their future careers.

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Working Paper on

RADIO AND TELEVISION IN THE EDUCATION OF YOUNG PEOPLE FOR EMPLOYMENT AND AS MEANS OF POPULARISING TRADES AND OCCUPATIONS

by

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In the Soviet Union, broadcasting and television work in close conjunction with the schools. Hence when problems to do with the education of young people for employment, or with vocational guidance, turn up, we tackle them in conjunction with the organs responsible for national education and enlightenment, and adapt ourselves to the programmes and curricula evolved by the school authorities.

In our broadcasts for children and young people, we try to bring out the grandeur of labour and to show what a useful and beautiful thing it is. We try to pay tribute to the working man, to what he does and to the skills he displays.

In describing the achievements of science and technology for the benefit of children, in telling them about all the wonders of automation, of space-craft, of the chemical plant turning out things hitherto unheard of, we try to show, not only the fruits of labour, but also the processes of manufacture. We try to show the men and women who produce the goods.

In acquainting our young viewers and listeners with the world around them, we endeavour to show them that the world is to a very large extent the creation of mankind. We try to make them understand that work is more than a means whereby one earns one's daily bread; it is a powerful factor in producing an all-round personality.

A celebrated Russian writer, M. Gorky, wrote: "From the very first day on which he becomes aware of the world around him, a little person should be taught about what has been done by the countless generations which have gone before. Once aware of this, he will understand that what has been done before his time has been done for him.

"......... The child should be made to realise that from the toy he is playing with to the idea of universal fellowship, everything on earth has been produced by those who have gone before. The efforts made, the blood and sweat poured out, have been expended to this end. The child must learn to respect the labour of his ancestors."

We use all the manifold resources of radio and television (radio plays, talks, documentaries, memoires and stories, television sketches and television shows) to induce the young listener or viewer to love work and respect the work of others. A few of the more popular programmes are briefly described below.

For more than forty-five years now, we have been broadcasting a programme called "The Little Dawn of the Pioneers" as part of our broadcasts for adolescents. In that time, more than one generation has grown up, but the programme remains one of the most popular of children's broadcasts. Its characteristic tune goes out over the air from Moscow every morning, and children listen to the programme before they go to school.

In this particular programme, we frequently illustrate people from every conceivable walk of life, describing their successes and the profound satisfaction they derive from a job well and truly done.

Almost every school in the country is bound by ties of friendship to some industrial undertaking, collective farm or research institute. The schoolchildren visit their older friends in farm or factory and see for themselves what is being done. In their turn, engineers, technicians, shop workers and collective farmers are not infrequently to be seen in the schools. We use radio and television to encourage these links and to describe what children learn from their contacts with people in employment.

Little streams together form great rivers. Respect for labour in the highest sense of the expression begins when a child learns to take care of the desk at which he sits, and to look after his own exercise book.

Regularly every year, in our wireless and television programmes, we describe, for the benefit of children in Form I how exercise-books, books and pencils are made. We describe the efforts the builders make to build a new school, and the vast amount of energy expended by the printers and other workers in preparing for the school year.

Then there is a series called "Where Dad and Mum Work". This is a radio programme designed to acquaint children with various trades and occupations, and to show the vast amount of work which goes into the making of even the commonest objects of everyday life.

So as to give our young listeners a more comprehensive idea of the working life of the country, we had a series called "Journey in Pursuit of the Sun", broadcast over the Moscow radio for a whole year. Listeners were asked to undertake an imaginary journey across the Soviet Union, from the Far East to our western borders. Journalists and writers took our listeners into the far North, or into the burning sands of Turkestan. The children heard of achievements in Siberia and on the Volga, in the Ukraine and in Byelorussia. They learnt how people work in the Baltic provinces and on the slopes of the green Carpathians.

On the television, the series "A Little Star is Shining", "The Pioneers' Television Agency", "Tournament among the Skillful", and "Guardians of Nature" tell of the life of the country and of schoolchildren's activities in all their manifold forms. They teach the child to adopt a responsible attitude towards any task he may be called upon to do (be it gathering scrap-metal or helping his seniors in nature preservation). While teaching children something about occupational skills, these series are designed to awaken a strong sense of civic responsibility in the viewers.

We try not only to encourage the more inventive or resourceful children, but also to awaken the children's interest in some form or other of employment.

Our little televiewers can accompany their favourite heroes on absorbing visits to factories and plants, there to acquaint themselves with the workers and what the workers do.

The Central Television Network has a programme called "Skilled Hands", which teaches children how to make their own toys and little artifacts.

In this fashion, a most important aim is attained, that is to say, children are taught to respect working people and to take care of what they, and others, make.

For the older schoolchildren, choice of a career has become less academic and more imminent. For them, we broadcast programmes which are more comprehensive and in a sense more serious.

Of course, we do not try to run a kind of radio information agency which would describe every possible occupation and trade in detail. Such a thing would in any event be impossible. We do try, however, to give a rather more detailed picture of the workers in their various trades. We show people in the actual setting of a given trade or occupation, and no longer describe an occupation in the abstract.

In our programmes for the older child, we often deal with the basic questions involved in the choice of a career. Our listeners, for example, took an active part in radio discussions on such themes as: "Can jobs be classified as creative or uncreative?", "Does a worker need a secondary education", "Are all occupations suitable for girls?".

When children ask for further information about some particular occupation, we frequently devote a special broadcast to answering their questions. The stream of such inquiries is

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gradually swelling. Most of the letters come from boys and girls who are leaving school. They are finishing in Form VIII or Form IX, and anxiety about the future (or simply a desire to share their plans with someone else, or to obtain advice on a decision already taken) induces them to put pen to paper. How are they to find their bearings in life, what occupation ought they to choose, where can one be useful, what sort of job would be interesting? - these are the kinds of questions which interest them. These young people are approaching a decisive moment in their lives, and we are very happy that they should approach us, as they would old friends, for help and advice.

Probably the most convincing and impressive form of answering these questions is for somebody to come to the microphone and talk about his occupation, not as an outsider, but as someone who knows from experience what he is talking about. Such a person is well placed to tell his audience about the difficuties of his job, the satisfactions it offers, and its value to society. Of this we are convinced, as a result of the impact produced by a series of broadcasts called: "I'll Tell You about my Job". The value of these broadcasts lies in the fact that an expert in some particular calling can describe the creative aspect of his work, besides its value to society at large. This is important, for every young person is tempted to try himself in a field which offers difficulties. Most young people have something of the pioneer spirit.

We have a series of radio programmes for older schoolchildren called "All of the Same Age" (broadcast twice a week). In the spring of this year we asked our listeners to answer three questions: "What occupation have you chosen?", "What attracted you to it?", and "What influenced your decision - the advice of your elders, the books you have read, or personal acquaintance with the occupation?".

The thousands of letters received formed a mass of the most valuable material, showing the hopes and aspirations of the young, the mistakes some of them had made, who could be helped, and who needed a word of warning.

A remarkable feature was that most of these letter-writers approached their own futures with an eye to the contributions they could make to society and to the country as a whole.

In putting together our vocational guidance programmes, we are ever mindful of the requirements of the national economy.

One of the things we have to do is to show the romance attached to work in agriculture. The radio station "Youth", in its series "I Come of Farming Stock", describes how such traditional occupations as those of the farmer and stock breeder have changed.

We still have the problem of training workers for light industry, the food industry, building and the services. Radio and television will certainly have a part to play in tackling it, already we have made a beginning by broadcasting programmes about people in the relevant occupations.

We also have competitions as a means of increasing the interest taken in particular occupations. These have indeed become very common in the Soviet Union. Such competitions are organised among milkmaids, agricultural tractor-drivers, waiters, fitters, and mechanics, and the names of the victors are broadcast over the air. Those responsible for television programmes for young people have devised a series of similar competitions for girls. The first was organised for telephone operators and the like; the result was that a stream of girls applied for such jobs. Other series were devoted to female workers in the food industry, kindergarten attendants, and workers in radio and television factories. Competitions are to be organised for female house-painters, salesgirls in victualling establishments, and seamstresses.

Every trade and calling offers a rich field for investigation. This is well brought out by the exhibits at the Permanent Exhibition of Young People's Technical Artifacts, organised under the banner: "Create, Invent, Try Out!". At this exhibition, people from every conceivable walk of life display their powers of invention (or ability to rationalise and simplify), proving that there was room for creative initiative in all of them.

The family, of course, plays a very big part in preparing young people for employment. A young person's future career depends to a very great extent on the way he or she has been brought up at home, on the influence exercised by his or her parents, and on the example set by father and mother.

There are special programmes for parents on Soviet radio and television. They are called "To Adults, about Children", and they show the experience acquired with education for employment in the home, and give valuable advice on how parents can best help their children in the choice of a career. People from all walks of life appear at the microphone or on the television screen. Parents, teachers, workers, and collective farmers frequently take the air. In this series we try to show how powerful is the effect of the example set by parents in their relation to labour and their involvement in their own work.

General Conclusions: In friendly co-operation with parents and school-teachers, and endeavouring to enlist the interest and support of a broad section of society, we are trying to make radio and television - which represent the most remarkable achievement of the age we live in - into the instruments whereby active assistance can be given in the raising of an industrious younger generation.

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Working Paper on

THE DOCTOR'S ROLE IN THE OCCUPATIONAL GUIDANCE GIVEN IN GEORGIAN SCHOOLS

by

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Every year, millions of young people finish their secondary schooling. Each has to face the question: "What am I going to do in life?".

It is, of course, easier for an adult than for an adolescent to choose an occupation without outside assistance, since he finds it easier to adapt, socially and biologically. An adolescent, being so much less experienced, and handicapped as he is by the fact that in him the mechanism for adaptation to the environment is not yet fully developed, requires systematic guidance and supervision.

Choice of the right occupation, for the adolescent, is of course a matter of very great importance. He is on the threshold of his working career and it is vital that he choose aright.

The question is the more difficult for the adolescent in that his brain structure, bone structure and nervous mechanism are not yet fully developed. In fact, neither physically nor mentally is he grown up. Naturally, he bears the imprint of heredity, and is to some extent marked already by his environment. But he still retains a good deal of adaptability. Hence, if he starts off by choosing the wrong occupation, the fact may be masked for a very long time, and not be apparent in any way, even though he may in fact have suffered grave physical damage.

It is not very often that we come across an obvious example of damage to health caused by the choice of a wrong occupation. Unfortunate consequences are quickly overcome (although not always painlessly). In the very great majority of instances we observe no obvious incompatibility between the worker and the occupation he has chosen, since man can adapt himself, as a general rule, to the exigencies of the work he does.

But the damage done, and the constant tension deriving from the effort to adapt, show themselves in the form of overstrain. For the human organism, the process is slow and insidious. For our purposes, this is what presents the greatest difficulty.

Accordingly, it is the task of society to assist the adolescent to choose an occupation suitable for, and conducive to the development of, his special interests and aptitudes - an occupation which will not prove injurious to health.

Occupational guidance plays an important part in this. It involves the psychological preparation of the adolescent for his future occupation. The adviser has to be acquainted with the adolescent's state of health, his interests and aptitudes, and the degree to which he is physically mature. The adviser must also know what the employment opportunities are in the particular area, and he must have some idea of the demands which will be made on the adolescent's organism as he grows up in a particular occupation.

Sometimes chance plays a decisive part in the choice of an occupation. The adolescent's relatives or family, his friends or school-teachers may advise. Unhappily, the people who give such advice are not always very well qualified to do so. They are usually unacquainted with the psychological demands a particular occupation will make, nor are they well equipped to ascertain whether the adolescent in question possesses the requisite capacities.

Sometimes, too, an adolescent will choose a job because he feels drawn to it. Unfortunately, research has shown that such feelings can change. Often enough, an adolescent will be little or not at all suited to the occupation he feels attracted by.

Thus, a young person may mistakenly choose an occupation involving considerable nervous strain, close and continuous attention, or heavy responsibilities (a telegraphist or engine-driver, for example). The young person has to make unusual efforts to do the job, and the result is nervous disorder or neurosis.

Occupation guidance, then, presents problems which are neither purely medical nor purely psychological. Over and above this, the occupational adviser needs to have some acquaintance with industrial life and of occupational requirements.

Industrial workers, therefore, and teachers from establishments of secondary and higher education, as well as doctors and psychologists, must co-operate in guiding the adolescent towards a suitable occupation.

In this respect, the secondary school has a most important part to play. The school-teacher watches a young person grow up from an early age and should have a very good idea of that young person's aptitudes, physical constitution and psychological characteristics. Hence the school can provide valuable assistance in the choice of an occupation.

The school doctor, too, can provide valuable help by giving lectures, for example, on the health aspects of various occupations and on the significance of a correct choice of job. The doctor, too, having followed the young person's development throughout his schooling, can take that young person's health into account in advising on an occupation.

Later on, when the adolescent begins work (or starts a training course before taking up a trade), he undergoes a medical examination to decide whether or not he is fit for the job.

It is essential that action with an eye to occupational guidance be started very early in the lives of school-children. In Georgia, it begins when a child reaches Form V, the idea being by a series of observations to ascertain the child's inclinations, aptitudes, and state of health.

The young person is first of all studied with a view to ascertaining whether, psychologically and physically, he will be equal to the trade envisaged, bearing in mind, of course, the fact that these characteristics may change and develop in the course of time. Another point borne very much in mind is that the chosen occupation must be such that the young person's health will be in no way impaired, and such that he will work to maximum efficiency.

Some allowance, of course, has to be made for differences of sex, adolescent boys being less changeable in their capacity for adaptation than girls.

All in all, then, we can say that in the USSR, the doctor endeavours to make his recommendation as to choice of trade or occupation. He does this:

(a) by medical examinations in the school;

(b) in the Occupational Guidance Committees which exist in factories and undertakings;

(c) by individual examinations undertaken in special consulting rooms for adolescents;

(d) by periodical medical check-ups.

Doctors looking after young people make a systematic study of the undertakings, organisations and collective farms in their particular area, to ascertain conditions of employment.

At the same time a systematic investigation is made of the way in which adolescents are employed. This is done with an eye to the advice given in the past, the idea being to draw general conclusions by which occupational guidance activities can be improved. This work is done by a specially-appointed practicioner within consulting rooms for adolescents; it is also done in hospitals, clinics, dispensaries, etc., subject to direction from regional or municipal medical authorities specialising in the medical care of young people. The adolescent goes to the consulting room to receive qualified advice, that is to say, occupational guidance based on the adolescent's state of health, his interests and aptitudes, due allowance being made for the interests of the State. That this should be so is readily understandable, since judicious occupational guidance involves the rational posting of people to the labour front, which in its turn keeps productivity high.

A normally fit person may become incapacitated if the nature and intensity of the work he is called upon to do, and the environment in which he has to do it, are unsuitable.

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In this connection, job descriptions, and investigations into the health implications of an occupation, are highly relevant. The job description includes a description of the effects the job has on a worker's health and a description of the environment and of the tools and machinery used. On this basis, it is possible to make deductions as to the special demands (if any) made on the worker.

Possession of a job description represents the first stage in the work of an occupational medical adviser. Armed with this information, the doctor can decide whether any particular young person is physically suited for any particular trade. Should the young person depart from the normal to an excessive degree, the doctor can then decide how far the conditions obtaining in a particular trade would limit that young person's usefulness. Thus, a tuberculous adolescent would not be advised to take up a trade involving work in clouds of dust, while somebody who had suffered head injuries would not be guided towards a noisy occupation.

For the purposes of occupational guidance, it is useful to classify occupations and trades according to their health characteristics.

With increasing mechanisation and automation, and an increasing use of chain-assembly, muscle-power is becoming less and less important, while the boundaries between physical and mental labour are disappearing. The adolescent now has greater demands made on his understanding and quickness of perception. Training can help to produce these qualities, as well as better co-ordination of movements. Attempts have to be made to ensure that control systems do not make demands going beyond the psychological possibilities of the operator.

Cybernetics is a science which has shown the need for more industrial psychology, i.e., the study of the relationship between man and machine. Whence the need for highly-developed procedures for assessing the suitability of young people (handicapped as well as healthy) for different kinds of occupation. Psychology has its part to play here, along with physiology.

Our general conclusion will be that if the adolescent (handicapped or normal) is to receive proper occupational guidance, then the person giving the advice must be familiar with the exigencies of the various trades and occupations, with the effects they have on health, and with the character of any compensatory processes.

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Working Paper on

DETERMINATION OF VOCATIONAL SUITABILITY OF ADOLESCENTS FOR WORK IN INDUSTRY AND AGRICULTURE

(based on data collected in the Georgian SSR)

by

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Industrial and agricultural expansion in the USSR calls for systematic training of skilled manpower. For this purpose, some hundreds of thousands of adolescents are every year admitted to vocational schools and in undertakings where they learn various trades.

These young people find themselves in entirely new and unaccustomed surroundings in the undertakings where they are engaged or as pupils in the schools - a working environment where they are exposed to the sum of different factors making up the vocational (and specifically productive) background.

Today, though progress has been made in improving industrial hygiene, there are still very many undertakings where conditions may be harmful to the workers' health - for example, the high temperature and humidity required for textile processes, noise and vibration caused by the operation of many types of machinery and tools, bodily posture required for various kinds of work.

In agriculture, a vast assortment of varied production processes is involved. Modern scientific and technical discoveries are widely applied, systematic mechanisation and electrification are introduced, so that agriculture in the USSR is becoming more and more assimilated to modern industrial conditions. Agricultural work nevertheless still retains some specific features. The first is that most of the work is still done in the open air, in general a favourable factor and a contribution to healthy working conditions. Quite often, however, open-air workers are exposed to unfavourable weather conditions (temperature, humidity, excessive sun, rain, etc.), sudden changes depending on the climatic zone, the seasons and the way in which the work is organised. In the South of the USSR high temperature and excessive sunshine are of particular importance.

Despite progress in agricultural technology and constantly increasing mechanisation, there is still a good deal of manual effort in farming. Muscular exertion in the sun, in summer heat, heightens the unfavourable effect. In working with farm machinery the immediate environment is worsened by the heating of the air and the machinery surfaces by the engines.

The second feature of agricultural labour is the seasonal character of the main tasks, accompanied by the frequent necessity for getting the work done in a very limited amount of time.

The third characteristic is the frequent recurrence of a large number of different operations that have to be performed by the same individual. In industry, the worker generally carries out the same operations day after day, but the daily round in farming is highly diversified.

Research has repeatedly shown that the unfavourable factors in the working environment have more pronounced physical effects on the adolescent than on the adult worker.

It follows that the industrial doctor's most important task is to counter the possible harmful effect of working conditions on the younger workers, and to determine their suitability for one or another kind of farm or industrial work.

This investigation must apply to young people in good health as well as the ailing. For the first category, it is important to determine their physical capacity in order to recommend the most suitable type of work. For those with some ailment, the mere possibility of working in any trade has to be investigated to avoid exposing them to the harmful effect of unsuitable work.

Ascertaining the vocational suitability of any young person calls for the most careful appraisal on the part of the doctor, as his judgement on the matter will largely decide the individual's future life and work.

Every occupation imposes its own physical constraints on the worker, and this means that particular care has to be taken in directing an adolescent, who is not yet physically mature, into any kind of work; his functional capacity must be determined in every case. The individual's physical capacity and the demands imposed by any particular trade must be compared: these are the two vital elements in determining vocational suitability.

In practice in this field, it must not be overlooked that an individual's inclination towards a particular trade and his suitability do not always coincide. It may even be the case that the chosen trade is contra-indicated: any trade involving work where there is dust in the atmosphere may aggravate the pathology of a tuberculosis sufferer. Working in an unsuitable trade may very often not only make things worse for the individual but for others in contact with him. A colour-blind driver may cause a catastrophe. Determination of young people's suitability for an occupation must therefore be based on systematic investigation of their individual peculiarities and aptitudes.

Every adolescent should be recommended to the trade or trades corresponding to his anatomical-physiological physique and age-group and likely to strengthen his health and develop his interests and aptitudes. The examination for vocational suitability must take into consideration not only the constraints imposed during the training process but still more, the constraints he will be subjected to in the course of the work. This point is particularly important for any adolescent already suffering from some ailment or whose health is in some way not quite normal.

In giving his decision, the doctor will take into account the special characteristics of the subject's age in relation to the pathology and endeavour to forecast its future trend in actual working conditions. Obviously he will also consider the physical capacity for adaptation and accommodation.

The vocational suitability of adolescents is the subject of the "prior medical examination". Every youngster must by law pass such an examination before admission to any vocational school or agricultural or industrial undertaking.

This examination is directed to ascertaining the state of health, physical development and functional capacity of the subject. Special attention is given to chronic affections and any abnormalities in the state of health that might be aggravated in the working environment. The point is to ascertain not only the major effects of any factors involved in the occupation but any indirect influence there might be on the physical resistance and reactions possibly leading to the extension of any pathological process. To determine the vocational suitability the doctor must therefore have a very complete picture of the state of health of a young person wanting to enter a vocational school or an industry.

The doctor must also know a good deal about occupations, he must have in his possession the industrial health profile of the trade. This profile enables him to assess the principal constraints it imposes on the physical organs and the body as a whole.

The sequence of the doctor's work is as follows:

1. Study of the basic characteristics of the occupation and its demands on the human frame,

2. Careful study of the health of adolescents,

3. Comparison of the data concerning the subject's state of health with the demands made by the trade, taking into account the possible compensating physical mechanisms, leading to a decision.

For studying the basic characteristics of occupations the doctor must have the "health profiles" (sanitarnaja harakteristika) of all the important trades that will be taught in the local vocational schools and undertakings. The health profiles are drawn up by the doctor, in co-operation with the industrial medical officer of the local health and epidemiological office, in the course of joint visits to industrial plants.

The health profile contains a detailed description of the industrial processes, timetable of work and rest periods, etc., whether the process creates dust, gas or steam (if so, the profile specifies exactly what and how much of these elements is present). The meteorological conditions are taken into account and seasonal changes affecting temperature, humidity, air circulation, heat radiation, etc., noise (level, frequency, duration), vibration (local or general, its parameters, duration, nature and frequency).

Great importance is attached to the bodily posture during the performance of the work, the rapidity and nature of movements involved, level of physical and nervous tension involved, its local and general incidence.

The sum total of this information enables the doctor to obtain an exact picture of the nature and degree of constraints imposed by the occupation on the various bodily organs and general physique of the young worker. He must have a clear idea of the health effect of the working conditions, both the negative and possible beneficial effects of the environment - for it may be that some pathological abnormality would be favourably affected. The doctor must be very well acquainted with the special features of the physiology and pathology of adolescence.

In view of the knowledge that working conditions affect the adolescent organism more than the adult, Soviet law prescribes a compulsory medical examination for all young persons before training in a school or on the job for any occupation. (Decision of the Soviet Commissars of the People 13.10.1922, confirmed in the Decree of the Praesidium of the USSR Supreme Soviet, 15.8.1955).

A medical committee gives its decision on the subject's state of health. The members of the committee are: the medical officer of the "Adolescents' Consulting Centre" and surgery, neuropathology, eye, ear nose and throat, dentistry and gynaecology specialists.

The committee meets in a health service office or polyclinic or the polyclinic section of a hospital. Special attention is given to timely detection of any affection in investigating past illnesses, heredity and living conditions.

After a full medical examination of the youngster and assessment of his state of health, the doctor compares the findings with the working conditions, the physical requirements of the work and decides whether he is to be admitted to the undertaking (or school) for training and work.

Before making his decision, the doctor considers any valid contra-indications, supposing the youngster's health and the work to be reasonably in conformity. The point is to avoid sending any youngsters with some abnormality into work (or training for a trade) that might aggravate the pathological condition.

For example, youngsters affected by adolescent hypertonicity would not be allowed to work where they are subject to high temperatures, noise or vibration, or where the tempo of activity might cause nervous and mental tension. Affections of the limbs (osteomyelitis, deformity or shortening of the leg, dilatation of the veins or arteries, etc.) would rule out work involving long periods of standing (spinning, weaving, tea-picking) or working at exposed heights (building trades, etc.).

Another series of affections (chronic appendicitis, hernia, etc.) equally rule out work involving much standing or carrying of loads.

The cardio-vascular system is of very great importance in vocational selection. If the examination reveals any organic defect in the heart, such as valvular weakness, chronic myocarditis, etc., the youngster must be strictly forbidden to engage in any trade involving weight-lifting, walking any distance, exposure to high temperature or dust, etc.

Pulmonary or respiratory affections are contra-indications for any trade involving dusty or unfavourable atmospheric conditions (textiles and any work in high temperatures).

Affections of the middle ear rule out work at exposed heights or near moving machinery (building work, electrical fitters, etc.).

Where the hearing is affected, work in noisy surroundings should be avoided (textile factories, industrial tailoring, forging and pressing, engine-testing, etc.) and also any work involving tension of the hearing (clockmaker, piano-tuner, etc.).

Short-sighted youngsters should not become proof-readers or printers, and they should not engage in work involving physical tension.

The medical contra-indications for adolescent workers are established on the basis of clinical, physiological and industrial hygiene research to ascertain the effect of working conditions on the workers' physique. When adopted by the USSR Ministry of Health, they have the force of law.

Working conditions in a number of agricultural activities give rise to various contra-indications. For example, unfavourable meteorological conditions (high temperature and humidity, likelihood of chills, excessive sunshine) are a reason for excluding persons with rheumatic affections, tuberculosis, chronic nephritis and other affections of the kidneys, etc. Cardio-vascular weaknesses forbid heavy physical work. Chronic liver or bile affections rule out engaging in heavy physical work or work where chilling is likely. Chronic respiratory diseases mean that dusty working conditions should be avoided. Work with insecticides and fungicides (DDT, hexochlorophane, etc.) should not be undertaken where there is any disturbance of the central nervous system, epilepsy, neurotic states, psychic disturbance, endocrine-vegetative affections, liver or kidney disease, atrophic rhinitis and other inflammations of the nasal passages, chronic laryngitis, stenosis of the larynx, etc.

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As an example, the way of determining vocational suitability for work on the tea plantations will be described. The contra-indications for this type of work were ascertained by the Institute for Scientific Research on Industrial Health and Disease of the Georgian SSR Ministry of Health, after a study of working conditions and the health of plantation workers. Work on the plantations is done in a humid sub-tropical type of climate. The harvesting is done between May and October, and the workers are often exposed to unfavourable conditions, high temperature and humidity in summer, very high humidity and relatively low temperature in early spring and late autumn.

With the high humidity and frequent rain, the tea-pickers often have to work in contact with wet bushes. Manual picking calls for specific physical effort and a high degree of attention and visual concentration. When the plantations are being fumigated, the poisonous chemicals employed may have harmful effects on the workers. The machine-drivers on the plantations work in noisy conditions accompanied by intense vibration. Research has shown that the work on the tea plantations puts a severe strain on the cardio-vascular and central nervous systems, on the motor and endurance faculties, the heat regulating capacity of the body and the respiratory organs.

The corresponding contra-indications have been established by research, and on approval by the USSR Ministry of Health, included in the No. 9 Schedule of Contra-indications. The following are listed: organic affections of the heart valves or myocarditis whether or not accompanied by irregularity of the circulation of the 1st, 2nd or 3rd degree; chronic affections of the liver or bile with frequent recurrence; rheumatism, ulcer of stomach or duodenum with frequent recurrence, diseases of the blood; affections of the peripheral nervous system or the motor and endurance mechanisms accompanied by dilatation of the limbs involved in the work, varicose veins of the lower limbs; organic affections of the central nervous system, acute vegetative disturbance; neuritis; nephritis, nephrosclerosis and other affections.

A study of the effect of working conditions on the tobacco plantations by the same Institute has led to the same list of contra-indications being applied to tobacco cultivation.

Research on the effect of working conditions in the textile industry by the Institute has been used as the basis for a list of contra-indications for recruitment for this industry.

All these points, however, refer to adolescents who are already ill. Determination of vocational suitability has to be applied equally to young persons considered "virtually healthy", but to some extent not quite fit. The effect of unsuitable work might be to aggravate the condition, whereas carefully selected employment might have a beneficial effect and improve the youngster's health.

Obviously an effort must be made to recommend the type of work which may help to eliminate the weakness. It would be undesirable, for example, to permit youngsters with some spinal curvature (humpback or slight adhesions) to work at tea-picking, where they are constantly having to bend down - which would be likely to aggravate the deformation of the vertebral column. They should be guided to work where they are able frequently to change their posture. Youngsters with frequently recurring dry otitis and tonsillitis should not be allowed to work in unfavourable atmospheric conditions.

To check the correct choice of occupation, observations must be made while the youngsters are at work. Both the physiological development of the youngster and his output (as a pupil or apprentice) must be taken into consideration. This is done in the course of the annual medical inspections. The doctor investigates the effect of work in a given trade on adolescent health, and where he finds conditions unfavourable, he will decide upon the youngster's transfer to a more suitable type of job.

Special attention is given to the age of recruitment for work or training. The age of admission to work or training in various branches of industry and agriculture is specified in the lists of contra-indications for adolescent employment and training.

It must be borne in mind that the existing lists of contra-indications are not necessarily final. In view of progress in mechanisation and automation and other technological changes, constant improvement in diagnosis and physiological research, etc., the current lists are re-examined and new lists established for new types of work.

It follows that the doctor in the "adolescent's medical centre" must not only be well acquainted with the list of occupations not open to young people, but must regularly keep in touch with current information on the subject.

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Working Paper on

ROLE OF VOCATIONAL ORIENTATION IN THE PREPARATION OF PUPILS FOR WORK

(Based on material collected in Tadjikistan)

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Tadjikistan, the host country for this Seminar, is a living example of the immense economic and cultural transformations brought about by the power of the Soviets on the Asiatic borders of former Tsarist Russia. The country was formerly an underdeveloped rural area, with just six handicraft-type undertakings employing altogether 400 or 500 workers. It now has over 600 large industrial establishments. Over-all industrial output is more than 70 times that of 1913: the volume of production in four days today is the same as the entire annual production of 1913. Manufactures from Tadjikistan are exported to more than 40 countries, including practically all the Socialist countries.

This enormous progress over a fairly short period would have been inconceivable without the development of public education. Tadjikistan was once a country of illiterates - out of 100 citizens, 2 knew how to read: now general education is open to all. There are more than 400 pre-school establishments for workers', other employees' and peasant families' children, with a capacity of 60,000.

Seven hundred and forty thousand children are being educated in the 3,071 general schools of Tadjikistan. Their later education is provided for by 43 technical colleges and higher education establishments. An extensive network of evening and correspondence schools and vocational schools has brought into being the working class and intelligentsia of Tadjikistan and permitted the training of hundreds of thousands of qualified workers in every branch of the economy and culture.

Industrial progress, the fruit of mechanisation and automation, raises productivity and brings about change in the occupational pattern of manpower in the various sectors; it affects the job content in different trades. Increasing specialisation and changes in the nature of the work lead to completely new forms of production and new trades. Expansion in output and the development of new trades call for an ever-increasing number of trained workers. In the Tadjikistan SSR the annual demand for skilled workers in agriculture, building and transport amounts to 120,000-160,000 individuals.

Mechanisation and automation lead not only to a quantitative increase in socialised production but also to profound changes in the worker's activity: the importance of physical strength and manual skill declines while his capacity to perceive and apply scientific principles and to adapt to changing production conditions becomes more important.

The school must give the youngster on the threshold of his working life a general training to match the current demands of social, scientific and technical progress; it must inculcate a scientific approach to the world, bring him up in the spirit of collectivism, patriotism and international socialism, it must prepare him to work for the good of society.

To succeed in working life, a wise choice of career is the key factor in a young person's career.

In our time of scientific and technical progress, the wise choice of a vocation is of first importance for the individual and the development of the individual personality and for society as a whole. An unsuitable choice leads to poor productivity, and high turnover; it makes the young person discontented and disappointed in his work and leads to moral deterioration. Experience shows beyond doubt that the formation of vocational ambitions corresponding to the needs of the national economy does not take place spontaneously, by itself, in the minds of the young.

In the light of the high degree of specialisation involved in different trades, it is often difficult for youngsters to understand the present-day division of labour and make their choice of future career. For this reason, and to enable these youngsters to make a sensible choice, there should be a means to guide them systematically, taking into consideration the different aspects of their personalities.

Mrs. N.K. Krupskaya, the well-known social militant and renowned teacher, has affirmed that the problems of vocational orientation and the choice of occupation are an integral part of schooling: of its "polytechnisation".

The Soviet school is against too hasty a vocational choice. The Soviet educationist's view is that the problems of vocational orientation must be resolved in the course of polytechnical education in the general schools. In the course of their training in the polytechnical approach to production, the children are better able to assimilate the information they need to orient their ideas about industry and the various trades open to them.

It is acknowledged that there is a close relation between the chosen occupation and the level of productivity achieved: the better suited the individual to his job is, the better he can develop his gifts and aptitudes, and the greater is his productivity. Scientifically based vocational orientation must therefore take into consideration the various aspects of the pupil's personality.

These considerations bring to the forefront the need to apply a system of vocational orientation scientifically planned and carefully thought out in advance.

Vocational orientation as an integral part of the educational process implies: comprehension by the pupil of the importance of a wise choice of occupation, their familiarisation with the different branches of the national economy, with the nature of the work, the qualifications required in each trade, and facilities available for training, assistance in choosing a trade and vocational guidance, counselling for pupils who hesitate or have any difficulty in making a choice, counselling for parents; and placement in employment.

Although vocational orientation in the schools of Tadjikistan is still at an early stage in its development, it has nevertheless already a specific systematic character, with its content and procedures adapted to the local circumstances (climate, economy and living conditions).

Co-ordination and inspection of vocational guidance activities is the responsibility of the Inter-Departmental Council for Vocational Orientation of the Tadjikistan SSR. The membership consists of the heads of social bodies and trade unions, representatives of the ministries, regional sub-divisions, undertakings and educational and scientific research establishments.

Timely information for the educational establishments and the public on the national economy's needs for workers and their rational distribution is the work of the Tadjikistan Committee of State for Manpower Planning. This Committee works out long-term forecasts (based on data supplied by the various organisations and the "Gosplan - the Planning Committee for 5 or 10 years ahead) of the skilled manpower balance sheet. The Committee also prepares the necessary documentation: short job descriptions for the various trades and principal technological processes, information on working conditions and opportunities they offer for further training and promotion.

The "Adolescent Consulting Centres" attached to the urban and regional polyclinics and health services arrange consultation sessions on vocational training and working capacity, for the benefit of pupils, teachers, parents and school medical officers. The centres arrange medical treatment for young people already at work or awaiting employment and systematic support for the work of the school doctors.

There are also vocational consulting centres in urban and rural districts attached to the Soviets of workers' representatives or regional education offices.

Inter-school centres have been set up for vocational orientation. In these centres the schools, families and social bodies combine to solve the problems involved in preparing young people for work and for wise choice of occupation. The centres have large collections of scientific reference books and organise advisory boards of teachers, doctors, psychologists and sociologists. Their aim is to help heads of schools and their staffs in their vocational guidance work.

There are also vocational guidance boards or committees in the schools, composed of teachers, the school doctor, parents, representatives of social bodies, etc. The school head or his deputy acts as chairman.

The Committee draws up its plan of the activities to be undertaken on the basis of thorough documentation and approved guidelines. It runs an advisory service on methods for the benefit of teachers and parents and establishes contacts with local undertakings, kolkhozes, educational establishments, etc.

The undertakings and vocational schools and technical colleges have vocational selection schemes where a series of activities, to ensure the adaptation of young people to working conditions, is put in operation. The radio, cinema, television and press serve as mass media for the dissemination of information on the achievements of the national economy, occupational opportunities, career prospects etc.

The Tadjikistan schools have already some experience in prevocational training for their pupils. They know that the evocation of a stable and informed interest in a particular job is the result of a long educational process integrated in the process of education as a whole.

In the Tadjikistan schools, the children are familiarised with the idea of work and a trade from their earliest age, and thus psychologically prepared for working life. In the schools in Dusanbe, Kanibadum, Nurek, Slavosk, etc., an illustrated alphabet is used by the teachers to familiarise the children with the characteristics of various trades and start discussions with them. Attention is paid to inculcating respect for labour and how to look after the material objects produced by labour. The picture books, etc., produced for children show various types of industrial, agricultural and service activities. Visits to kolkhozes, factories, etc., are organised for the children in the primary classes, and they are required afterwards to describe their impressions. The children are generally most interested in their "training for work" (trudovoe obucenie) lessons and readily take part in the farm work arranged for the "Young students natural science clubs" in the context of their out-of-school activities.

The children in General School No. 2 of the Gissarskaja region have built aquariums and enclosures for tortoises, etc.; they stuff birds and reptiles, plant trees in the school plots, and so on, under the direction of their teachers.

In the civics, history, physics and chemistry lessons for the older children, beyond the primary stage, the teachers take care to relate the subjects to work in the electrical industry, chemistry (its application to agriculture), etc., and to point out the achievements in these occupations.

The "training for work" (trudovoe obucenie) given in the general schools is tied up with the performance of socially useful jobs and contributes to arousing the children's interest in trades and giving them practical preparation for working life. This training is planned to give them a creative attitude towards work. For the older pupils, there are practical work and optional courses on tractors and motor vehicles, wood and metalworking, field cultivation, animal rearing, beekeeping, cotton growing, etc.

The practical work and optional courses are very important elements in the vocational orientation of the children, as they enable them to familiarise themselves with the work of a whole series of different trades.

The schools are concerned to bring up and educate the children in a way to ensure the harmonious development of the whole personality. They rely on the principles of the philosophy of dialectical materialism, which teaches that aptitudes are brought out and developed in particular concrete socio-historical conditions. The schools arrange competitions, sports events and exhibitions of the creative technical and artistic work done by their pupils.

While it is the school's task to awaken and develop the child's interest in a trade, the final choice is for the child, who makes it in full freedom and awareness. Free choice of a career has also a most important moral aspect: to make such a choice wisely, the child must be brought to understand that the question he should ask himself is not merely "What shall I become?" but "What ought I to become?".

The schools try to get a clear picture of the interests and abilities of the children from their very earliest age. They use various methods for this.

They frequently make use of profiles. A pupil-profile is based on the sum-total of recorded observation of the pupil by teachers, school doctor, etc. The child's written and oral answers, drawings, sketches, etc., are analysed from the educational and psychological point of view; data collected on their way of life, parents' and other relatives' occupations, etc.; characteristics such as interest in observation, capacity for attention, imagination, speed of reaction, initiative, etc., are noted; their rate of progress in their work and studies is measured.

The encouragement of vocational interests and aptitudes is also a function of the out-of-school activities. The most representative example is the work done in the production brigades; and in this work, the Marxist-Leninist principle of creating a close relation between education and productive work is fully realised.

The children in the rural schools learn all about farm occupations, to respect workers in these trades and to love the land, through their systematic participation in productive and experimental agricultural work, cotton and vine growing, silkworm and animal rearing, etc. Their agricultural experiments help to develop their aptitude for organising their work.

The children's interest in agricultural work and their disinclination to leave the land owe much to the help the sovkhozes and kolhozes give the rural schools. Modern rural schools with well-equipped laboratories are being built and school farm camps arranged with their help.

In a number of districts where the need for agricultural specialists is particularly urgent vocational schools and technical colleges have been set up, and the technical colleges are equipped with suitable land to function, at the same time, as sovkhozes. Part of the cost of higher education for pupils leaving these schools is borne by the sovkhozes.

Through well organised vocational orientation, out of 30,000 pupils leaving the rural and town schools in 1970, more than 9,000 went to work in the sovkhozes and kolkhozes. They took up work as mechanics, breeders, cultivators and in other skilled trades. Many former pupils of the rural schools have become Heroes of Soviet Labour, deputies of the Supreme Soviet and local Soviets of Tadjikistan, farm managers, stock-workers, etc.

Productive work has a beneficial effect on the rate of assimilation of the children's studies, in the regular school subjects as well as their polytechnical training. Contact with workers' and kolkhoz communities and the opportunity to become familiar with the lives of these workers stimulate their interest in social matters.

It has already been remarked that the children's work in experimenting and research, their out-of-school activities in the various clubs and their work of social utility help to bring out their inclinations and aptitudes. Among the out-of-school activity groups, there are some known as "interest clubs", for youngsters interested in engineering, building, medicine, biology, machine fitters, etc.

In many of the Dusanbe, Leninabad, Burek, etc., schools, permanent exhibitions have been set up to stimulate vocational orientation.

In 1969-70, the school broadcasting centres sent out more than 28,000 items on themes related to vocational orientation. The children watched a series of films vividly illustrating scientific and technical progress, films specially planned to awaken their interest in scientific work and research and encourage the ambition to become research workers.

Soviet educational research has shown that the cinema and television are particularly valuable in vocational orientation, especially for giving the children a fund of information on the occupations open to them. It has been proved that there is a real difference of impact between the presentation of a particular matter orally or visually. The experiment was carried out with 2 groups of pupils from the same school year. Each group was given information on the trade of fitter-machinist, in the one case verbally and in the other, in a film with sound commentary. Afterwards it was found that 5% of the pupils in the first group and 27% in the second wanted to becme fitter-machinists.

The out-of-school activities in which discussions on changes in occupations and vocational choice are undertaken, have been found more effective where the teaching staffs of the schools and faculties of education in the higher education establishments participate.

In view of the obvious influence of the family circle in stimulating the children's vocational preferences, the teachers take particular care to see that the parents are given adequate background information, and they stress the importance of a combined effort with the school in guiding the children's vocational choice.

The higher education establishments in Tadjikistan, which include the Lenin University, the educational colleges of Dusanbe, Leninabad, Kuljaba, etc., have drawn up profiles of key trades (tractor driver and mechanic, cotton cultivator, weaver, etc.) and a classification of trades on the basis of psycho-physiological indices. This psycho-physaiological analysis provides a scientific basis for the vocational counselling work of the teachers and doctors, etc.

The scientific research establishments work in liaison with the general and vocational schools and other educational institutions and with the undertakings; they invite specialists and research workers to give talks on different trades on radio and television.

Recommendations on the methods to be used are passed on to the schools to help them in the harmonious development of their pupils'' personalities and help them to achieve their vocational ambitions.

In the teachers' advanced training colleges attention is paid to developing their capacity for vocational counselling. The training for work in the general schools is the first stage of the preparation of the children to make a wise and informed selection of their future work. This preparation is continued in the vocational schools, technical colleges and production training courses.

The scientific institutions and schools have to cover the following aspects of vocational orientation: improve the general education and training for work given in the schools; work out methods for research in detecting aptitudes and interests; prepare appropriate teaching material on trades; ascertain the most effective vocational orientation methods to be used in class and in out-of-school activities; prepare suitable reading material for the pupils, school doctors and parents; thoroughly study published material on vocational guidance and produce recommendations.

The facilities used by the schools to provide vocational orientation are different, but all converge towards the same aim: to prepare the children for life, for productive work for the good of society. A characteristic feature of all vocational orientation activities is that they take into consideration not only the present state of development of productive industry and agriculture but also future scientific and technical progress. Researchers, teachers, parents and the members of the social organisations are systematically perfecting the methods of vocational counselling and guidance.

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Working Paper on

THE GENERAL SCHOOLS SYSTEM IN THE USSR

by

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of Education of the USSR

November 1967, marked the fiftieth anniversary of the Great October Socialist Revolution; April 1970, the hundredth anniversary of V.I. Lenin's birth; May 1970, the twenty-fifth anniversary of the victory won by the Soviet people in the Great Patriotic War. These very important anniversaries, marking as they did major events in the history of the Soviet nation, were accompanied by vast efforts in the latter's economic, political and cultural life. Those who run or are employed by the national education system, prompted by a desire worthily to mark these outstanding occasions, made great efforts to improve the education and training given to children and young people.

In the last few years attention has above all been concentrated on the introduction of compulsory eight-year schooling and on an endeavour to ensure that as many young people as possible shall enjoy a secondary education. Endeavours have been made, too, to improve the contents and methods of education, to extend and improve the pre-school education given to children, to improve teacher-training and teaching equipment, and to reinforce, extend and co-ordinate research into the science of teaching.

I. THE INTRODUCTION OF COMPULSORY EIGHT-YEAR SCHOOLING AND GENERAL SECONDARY EDUCATION

In 1969/1970, there were 178,000 schools in the USSR; 80,800 elementary schools, 54,400 eight-year schools, and 42,900 secondary schools. Generally speaking, there is a tendency to make our general schools fewer in number but bigger. Thus, there was a drop of 4,600 last year in the number of elementary schools; the figure for eight-year schools was 10,000. Secondary schools increased by 1,600.

In the last two years considerable success has been achieved in the implementation of the Compulsory Eight-Year Schooling Act (for children between 7 and 15-16).

One of the principal problems facing the national education authorities is to ensure that the children finishing in Form VIII are as numerous as those entering in Form I. To this end, various things have been done.

In the last two years, the Ministry of Education of the USSR and local education authorities have done much to extend general ten-year schooling (eleven-year schooling in the Baltic Republics).

In 1969-1970, 6,500,000 young persons received a full secondary education (this figure includes those turned out by the Medium-Level Specialised Educational Establishments). A significant proportion thereof, having successfully passed a competitive examination, are pursuing their studies in a Higher Educational Establishment. Boys and girls who finish their general secondary schooling but do not go on to a Higher Educational Establishment, take up employment, first having taken a course the length of which varies with the occupation chosen. A considerable proportion enter the technical schools and colleges, which provide skilled workers for especially complicated trades.

The educational establishments providing a secondary education comprise, very generally speaking, the following: the secondary general educational and labour polytechnic, the secondary specialised educational establishment, general educational colleges for evening classes and correspondence courses, and the secondary specialised educational establishment. Vocational training schools which provide a general secondary education along with technical instruction, are becoming ever more common.

In town and countryside, there is a far-flung network of schools conducting evening classes for young people who for any reason have dropped out of the secondary-school system and taken up employment.

In the last two years, more than 1,200,000 young people have completed their secondary education in such schools. In 1968-1970, some 2,800,000 of them were studying in the senior classes (Forms IX-XI) of these establishments.

To encourage people to acquire a secondary education, the Council of Ministers of the USSR offers a number of privileges for workers who combine education with productive employment. Thus, a worker attending a night schools gets an extra free day in the course of the week and draws half his pay for it. When sitting for his passing-out examination, he enjoys full paid leave. In Form VIII he gets eight working days; in Form XI, twenty.

II. IMPROVEMENT IN CONTENTS AND QUALITY

In 1968-1970, a great deal of energy was expended on improving the quality of the secondary education given in our schools and on introducing new curricula and textbooks.

The new curricula differ chiefly from the old in that they are scientifically more up to date. The new ones make provision for the trends observable today in a form accessible to the pupil.

In mathematics, for example, there is no longer a hard-and-fast division between arithmetic and algebra. The approach is now more functional. Attempts are now made to acquaint the pupil with the concepts and methods of significance in science and technology (the method of co-ordinates, elementary differential and integral calculus, rudimentary probability theory).

In the teaching of physics, instruction is given in the molecular and atomic structure of matter, and in the theories of molecular kinetics and electronics. A great deal of attention is given to the study of laws, especially the law of the conservation of matter and energy, the laws of mechanics, and others. The new curricula call for classical physics to be taught with an eye to modern physical theories. Pupils are taught something about the limitations applying to the application of certain concepts and laws of classical physics.

In general biology, the new curricula differ profoundly from the old ones by their scientific character and by the way in which courses are built up. They call for study at the molecular level of the processes going on in cells and tissues. Exchanges of substance and energy studied with an eye to the outcome of the most up-to-date biological and chemical research. Genetic theory, the basis of natural selection, is explained, and stress is laid on the part played by genetics in agriculture, and on the significance of genetics in medicine. Pupils are given a grounding in the ecology of plants and animals. The notion of the biosphere is taught.

In chemistry, greater attention than in the past is now given to the periodical system of the lements and to questions of chemical bonds. A greater use is made of the concept of the spatial construction of molecules and of the electronic nature of chemical bonds in describing the machinery of chemical reactions.

In the study of literature, an attempt is made to lay bare the creative individuality of each writer, and to get the pupil to understand in what respect a writer's works are original in form and content. Attempts are made to bring out the social, political, moral and aesthetic problems inherent in the work being studied.

Considerable changes have been made in the way geography, history, and other subjects are taught.

The most significant innovation is the changeover to a three-year initial period of schooling.

That this changeover was possible had been deduced from the research done over many years by a number of Soviet teaching experts, such as Academician L.V. Zankov, Drs. N.A. Menchinskaya, D.B. Elkonin and A.A. Lyubinskaya, and by research workers in the Scientific Research Institute dealing with the contents and methods of education (under the leadership of S.M. Yezikov).

Thanks to research, new elementary curricula have been devised. The teacher's role in the education and development of children is being greatly increased as a result.

Over a number of years, experimental teaching methods were tried out in several thousand lower forms in the Leningrad, Vladmir and Sverdlovsk areas and in other territories, and in 1969-1970 new curricula and new textbooks were introduced in the lower forms of schools throughout the land.

The experience acquired with lower forms in the academic year 1969-1970 shows that the instruction given in the first three years of education is now accessible to all normally-developed children, and that the new curricula are likely to result in a considerable rise in the levels reached by the children. Practice has shown that pupils brought up on the new programmes are significantly better able to apply their knowledge in changed circumstances to the solution of fresh problems. They establish connections and make deductions more easily.

In the academic year 1970-1971, Forms I, II and IV will work according to the new curricula in all subjects. In the higher forms, in subjects such as history, literature, chemistry, geography, biology, labour, etc., the changeover to the new curricula is being completed. Rather longer is required for the changeover to the new curricula in mathematics and physics (in all forms), since the teacher must ensure that his pupils have thoroughly mastered one step in the argument before he can go on to the next.

In the new curricula and programmes, the idea that school should be combined with life, and technical instruction go hand-in-hand with preparation for employment, has been extensively embodied.

Much importance is given to the application in factory and office, in social and everyday life, of the knowledge acquired on the school bench. In all subjects, care is taken to show the way leading from theory to production and to the use of knowledge in everyday existence.

In the physics curricula, for example, provision is made for the study of elementary nuclear processes and instruction is given in the principles which govern the working of nuclear power stations. While studying theory, the pupils study the most widespread applications thereof, such as heat engines, the production, transmission and use of electric power, telecommunications, electricity and radio. In the chemistry programme, provision is made for instruction in the general principles governing the production of chemicals and the use of chemistry in industry, with especial reference to chemistry as an aid to agriculture. In studying the theory of plant nutrition, for example, children learn the rudiments of agricultural chemistry. More stress is now laid on laboratory and practical work. More films are shown, and more visits paid to factory and workshop.

The system of training for work, in force in Soviet schools, serves the same purpose. Training for work is in fact treated as a school subject. The children are encouraged to make articles of their own, and to acquire agricultural experience, out of school hours, and are given work which is productive and socially useful. Finally, certain activities are given a slant towards vocational training.

Training for work is a most important part of polytechnical education. Its purpose is to provide children with general technical knowledge and skills and to foster a creative attitude towards work which will enable them to make a reasonable occupational choice. It is intended to inculcate a creative attitude towards employment, and to prepare a child to make a responsible choice of a trade or occupation.

In 1967-1968, new curricula dealing with training for work were introduced. In schools of the general educational system, two hours a week are devoted to this subject by children between Forms I and X.

In the lowest classes, children are taught how to use paper, cardboard, tin, string and plasticine. Between Forms IV and VIII, training for work takes different forms, according to the sex of the child; thus, a boy learns how to work wood, metal and plastics, while a girl learns how to sew and cook. Both boys and girls have to learn something about the use of machinery and the technical applications of electricity. In village schools, children learn something about agricultural work. In Forms IX to X, training for work takes the form of practical metalwork, simple electrical engineering, work with cloth; agricultural chemistry, vegetable-growing, etc. The aim is to provide the child with some theoretical knowledge and some practical skills in this or that branch of activity. In some schools, training for work, as given to the older children, is extended at the expense of optional subjects, and becomes real production training. As a result, many school-leavers received rudimentary vocational training as drivers, tractor-drivers, carpenters, fitters, and so on.

Under the new curricula devised in connection with training for work, great attention is made to developing the creative abilities of the pupils.

Out-of-school activities play a great part in the new scheme of things. The formation of clubs and societies is strongly encouraged, and work and rest camps are created. Competitions and exhibitions are organised. At present something in excess of 200,000 technical societies are in existence;

they embrace several million schoolchildren. There are roughly a thousand "young technicians' stations" and "young natural science students' stations".

In the countryside, an excellent way of organising the work of schoolchildren is to set up production teams on collective farms. There has lately been an increase in such teams. Forestry camps for schoolchildren have been on the increase too.

The Soviet school inculcates respect for the people's traditions of work and an understanding of the leading part played by labour in society at large. Rooms devoted to "the fame of labour", circles to study the history of factories and collective farms, visits to undertakings - in many schools such things are characteristic.

In the course of being educated for employment, pupils acquaint themselves with various branches of industry and with various occupations, and they develop an interest in this, that or the other form of activity. In the last few years there has been a big increase in the specialised work done on the vocational guidance of schoolchildren. The latter are told about occupations in class; use is made of the press, radio and television; children are brought together with the best representatives of the various trades and occupations; vocational consultations are organised. Handbooks giving information about trades are issued, and in a number of towns and cities vocational guidance centres have been opened. Interdepartmental vocational guidance councils have been organised to co-ordinate the vocational guidance activities of departments and organisations.

Physical culture is an integral part of the Soviet educational system. It contributes to a child's all-round physical and mental development and helps to prepare him for life, labour, and the defence of his country. It helps to produce a new person, harmoniously combining within him or herself intellectual riches, moral wholesomeness, and physical fitness.

Physical culture systems in the Soviet school are constantly being broadened and improved. There are physical jerks every morning; brief interruptions for exercise during lessons; sports and games; the theory and practice of physical culture (as an optional subject); special activities are devised for the physically handicapped or delicate child; there are out-of-classroom activities (physical culture teams, sports clubs, matches and competitions, etc.); out-of-school sports activities in the places where the pupils live; activities in sports schools for children and young people, in pioneer camps, in tourist centres for children, and in athletic associations; there are spontaneous exercises by children in sports fields, playing grounds, and parks.

In all schools of the general educational system, physical culture begins in Form I, two hours a week being devoted to it in accordance with a standard programme. There are special programmes of activities for handicapped or delicate children. There are special programmes for optional physical culture activities, and for sports clubs in school physical culture teams and sports schools for children and young people.

In the country as a whole, there are something like 100,000 school physical culture teams, and more than 3,000 sports schools for children and young people.

To encourage mass sports activities among pupils in the general educational schools, there is, once every two years, a nation-wide "Schoolchildren's Spartaciad"; teams for every republic in the Union take part. A routine Spartaciad was held in 1969.

III. UNITY AND DIFFERENTIATION IN SOVIET EDUCATION

One of the assumptions on which the Soviet educational system is built up is that there must be unity in education.

This means, among other things, unity in curricula and academic standards. Whenever an attempt is made to improve a school programme or a textbook, the minimum knowledge and intellectual equipment required to produce a Soviet all-rounder, and to enable the latter to undertake a course of higher education, are given most careful consideration.

In the last few years, too, much more attention has been given to the development of individual aptitudes and interests, and to vocational guidance, so that children shall be ready to choose an occupation on leaving school. This is an important task, for in the world today industry and agriculture demand workers with drive and initiative.

To meet the needs of schoolchildren whose interests go beyond the compulsory school subjects, various optional courses have been devised. Thus, a child may elect to study the rudiments of radio electronics, art history, calculus, international relations, cosmology, the theory and practice of composition, the bases of chemical analysis, sculpture and ceramics, music, etc.; or he may undertake practical work of various different kinds. Besides which, after doing his compulsory eight years of schooling, he may, as mentioned above, continue his studies in a secondary general school, a Secondary Specialised Educational Establishment, or in a vocational school, as his interests and aspirations may dictate.

IV. WORK DONE OUT OF CLASS AND OUT OF SCHOOL

Work done out of class and out of school is an important link in the harmonious, all-round education of children and young people. To this end there are innumerable circles, clubs, societies, teams, and so on, in schools and in out-of-school establishments.

There are at present some 3,780 pioneers' homes and camps, some 1,000 "young technicians' stations" and "young natural science students' stations", plus 164 "young tourists' stations".

The work done in these clubs, societies, etc., and in out-of-school establishments is of a socially useful kind and is designed to inculcate industry, curiosity and zeal, plus an interest in science, technology, literature, the arts, sport; it is designed to develop creative abilities, organisational aptitudes, and the habit of independent work.

The circles and clubs in the out-of-school establishments represent a laboratory for similar circles and clubs in schools, and a basis for the training of pioneer instructors and organisers for work with schoolchildren. Recruits for such clubs and societies are recruited with an eye to their special interests and requirements, and to the characteristics of their particular age.

As part of the preparations made for the hundredth anniversary of V.I. Lenin's birth, great efforts have been made to acquaint schoolchildren with the life, activities and ideas of V.I. Lenin and with his exemplary significance, and to teach them about the revolutionary, martial and employment traditions of the Communist Party and Soviet people.

Tourism has been increasing greatly these last few years. Millions of schoolchildren take part in excursions and expeditions to study the land of their birth, its history and geography, and do much useful work for the national economy. Hundreds of thousands of schoolchildren took part in the All-Union expedition called "Faithful to the Testament of Lenin", and visited the sites at which the Soviet people acquired its revolutionary and labour fame. School expeditions set off on missions on behalf of the V.I. Lenin Central Museum and of the Museum of the Revolution, and on behalf of local historical or geographical museums and associations. Valuable material and documents were assembled, much of which was placed on exhibition in state museums. In many schools, museums and exhibitions were organised with the material thus gathered.

By taking part in excursions and expeditions, by collecting materials and creating museums, pioneers and schoolchildren learn the history of the land of their birth. They learn unreservedly to love their mother country. They broaden their horizons, acquire fresh knowledge, get to know their environment more intimately, and improve their health.

Out-of-school activities offer vast potentialities as a means of inculcating a thirst for knowledge, and of developing an aptitude for research. There are increasing numbers of young investigators' clubs and societies among the older children, in connection with all branches of knowledge. Experience is acquired in biology, chemistry, agronomy, and the schoolchildren concerned tackle work on behalf of scientific research institutes.

Because there has been such a boom in space research, schoolchildren are much more interested than they used to be in astronomy and cosmology. The first All-Union conference of young amateur astronomers met in Baku in 1969. By organising an exchange of information, and by action to improve the practical and theoretical training of the young amateur astronomer, the conference gave valuable assistance to the amateur astronomy clubs.

Action has been taken to improve the aesthetic education of schoolchildren. In the Soviet school, the child is taught to take an aesthetic attitude towards his environment, and to be a good judge of art. Such training is given him when he studies the principles of science, and in taking special and optional school subjects. Various kinds of out-of-school activity conduce to the same end. Pioneers' halls and camps, the children's departments of Trade Union Halls and Halls of Culture, do a great deal of work in the aesthetic education of children. School subjects such as music, singing and drawing

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play a big part too. New curricula in such subjects have been evolved; they provide for increased efforts by the schools to equip their pupils with special artistic knowledge and skills.

Original textbooks and audio-visual equipment have been evolved as well.

Quite apart from music and singing lessons and optional musical activities, choirs, orchestras of national instruments, symphony orchestras, brass bands, dance troupes and amateur music-lovers' clubs have in these last few years become very widespread. Tens of thousands of schoolchildren have been impressed by art and acquired a genuine love of music as a result of their membership of the choir and dance troupe organised by the V.S. Loktyev Moscow Municipal Hall of Pioneers and Schoolchildren. In May 1970, this ensemble was awarded the medal of the World Peace Council. Considerable national notoriety has been acquired by the song-and-dance ensembles of the Central Hall of Railway Workers' Children, run by S.O. Dunaevsky, by the song-and-dance troupes of the pioneer halls in Baku, Tallinn, Kiev and other cities, by the choir of the Institute for the Aesthetic Education of Children (with Professor V. Sokolyov, People's Artist of the USSR, as artistic director), by the symphony orchestra of the Leningrad Hall of Pioneers, and by the "Pioneers" choir (artistic director: G.A. Struve). The amateur choirs and orchestras created in the nation's schools are legion.

Mass forms of musical education have achieved widespread recognition: Holidays of Song, Festivals of Art, and exhibitions and concerts organised by school clubs and societies. Many schoolchildren's amateur music teams have taken part in concerts organised for the benefit of persons attending the International Conference on Musical Education for Children and Young People, which met in July this year in Moscow.

Experience shows that aesthetic education is successful when the efforts made by the schools are backed up by the organisations and institutions specialising in cultural and artistic matters. Thus, the Union of Soviet Composers and its committee on aesthetic education under D.B. Kabalevsky, State Prizeman and People's Artist of the USSR, have given valuable assistance. For example, schoolchildren and teachers alike have taken a great fancy to the "Music, Painting, Life" club created by the Union of Soviet Composers in conjunction with the State Film Industry Orchestra and the Tretyakovsky Gallery. They are also greatly taken with the lectures on musical appreciation, given on the wireless, in concerts for children and young people, by D.B. Kabalevsky.

All-Union and international exhibitions by young artists, organised by the bodies responsible for national education and culture, and by Soviet youth organisations, have become traditional. In December 1969, there was an exhibition in Moscow to show the works of young artists who had taken part in an international competition known as "I See the World". Children from many, many countries took part. In December 1970, there is to be an All-Union exhibition of work by young artists and sculptors; it will be held in the Central Exhibition Hall in Moscow. Preparations for this are already well under way in schools throughout the Union.

V. PRE-SCHOOL EDUCATION

The education of children in pre-school institutions has become an exceedingly important social phenomenon. Parents try to send their offspring to such institutions because they have become convinced of the value of such collective education. They see for themselves that the kindergartens have a logical, comprehensive programme for infant education, thanks to which an infant can acquire a harmonious, all-round background which will fit him or her for school properly so called.

Besides which, the booming economic and cultural life of the country and the high standards of living, together with the spread of education, mean that more than 60 per cent of Soviet womenfolk are actively employed and are prominently represented in the social and political life of the country.

So that women may happily combine motherhood with employment, more and more kindergartens are being created.

Children in institutions of this kind are becoming more numerous year by year. In 1967, the figure was 7,192,000; in 1970, around 9,500,000.

In the countryside, besides the normal kindergartens, which are always open, there are seasonal nurseries and kindergartens, and playgrounds, to cope with the extra flood of children during periods of intensive agricultural labour. These look after a further 4,500,000 infants.

Provision is being made for these pre-school institutions to cope with yet more children. It is planned within the very near future to reach a position such that every family can, if it wants to, put its offspring in a kindergarten. At present, up to 80 per cent of all children in Moscow, Leningrad, Baku, Ashhabad, Magnitogrosk and other cities frequent pre-school establishments.

Very early in the history of the Soviet regime the Government had provided kindergarten accommodation for more than five million infants. Besides which, the collective farms have on their own initiative and with their own money constructed pre-school institutions in considerable numbers. In the last ten years alone, the collective farms have built nurseries and kindergartens to accommodate 1,200,000 children.

Year by year, the amounts disbursed by the State in the way of assistance to mothers, and on education and services for children, are increasing. In relation to the figure for 1940, the sums disbursed for the accommodation of children in kindergartens and pioneers' camps were 8.4 times as much in 1968. Taking kindergartens and nurseries together, the figure is 11.6. In 1969, more than three thousand million roubles were devoted to such activities.

Co-operatives, trade unions, collective farms and other public institutions contribute, as well as the State.

The State takes the lion's share of the burden of providing pre-school accommodation. A total of 440 roubles per annum is paid for the upkeep of one child in a kindergarten; out of this, the State pays 348 roubles, and the parents a mere 92 (i.e., one quarter). The parents cannot pay more than 12 roubles 50 kopeks per month, or 150 roubles a year (one-third of the costs involved). Payments by parents with two or more children and earning a low income are reduced by 25, 35 even 50 per cent. The local authorities may even rule that a family shall be totally exempt.

For the sake of the infants' health, nurseries and kindergartens move out of the towns and cities during the summer and spend three months in the countryside. During this period the sums allotted for childrens' food are increased. Every year some 4,000,000 children are given a special health diet.

To improve the way children in pre-school institutions are fed, the Government has allotted another 125,000 000 roubles with effect from 1 January 1969.

In these institutions, infants receive an all-round education, physical, intellectual, moral, aesthetic and practical. In 1968, the curriculum for kindergartens was overhauled. The new programme presupposes the unity of education, the dominant part played by teaching, the importance of maintainining the children's interest in all-round education, and the need for developing a spirit of collectivism in children's attitudes to their mutual relations. The new curriculum has been drawn up with an eye to the curriculum for Form I. In other words, the kindergarten prepares a child for a successful school career.

The quality of the education given in such institutions naturally depends on the quality of the teachers. Hence both Party and Government take a close interest in the training of the teaching staff.

There are 202 teachers' training schools (in which 107,000 persons are studying) and 30 Higher Educational Establishments (with more than 24,000 students) which prepare the specialists needed by pre-school institutions.

To date, 94.3 per cent of all teachers and managers in kindergartens have had a secondary education and some training as teachers.

All in all, more than 500,000 teachers are active in pre-school establishments. They have to cope with the difficult task of providing a Communist education for the rising generation.

The multiplication of pre-school institutions and the scientific organisation of children's education on a collective basis by no manner of means detract from the part played by the family in the education of the young. The family is, and will remain, the basic nucleus of society, within which the future citizen grows up. Hence great importance is attached to scientific research into the problems to which the role of the family and of pre-school establishments in the education of children gives rise.

VI. TEACHER TRAINING AND ADVANCED TRAINING

There are 205 teachers' institutes, 49 State Universities, and 411 pedagogical colleges in the USSR, all of them concerned with the training of teachers. The pedagogical colleges are mostly concerned with teachers for the lowest forms and for the pre-school establishments; to some extent, too, they train teachers of music, singing, physical culture, labour education, etc. There are at present more than 850,000 students in the teachers' institutes (which cater for evening classes and correspondence-school forms of education as well).

The day sections of the teachers' institutes produce, year in year out, some 70,000 teachers, while the pedagogical colleges produce between 50,000 and 60,000.

The Ministry of Education of the USSR, in co-operation with teachers and scientists, takes action to improve the training of teachers.

New curricula for the basic subjects taught in teachers' training establishments have been evolved, with an eye to the demands made on teachers by the stage of development now reached by the general educational system. A great deal of work is done on teachers' training curricula in all subjects; in 1970, seventy such curricula were produced. The requisite text-books and teaching materials for students are being prepared for issue. Plans are afoot to issue some 600 titles between 1971 and 1975.

Preparations have been made so that, beginning in the academic year 1970-1971, the country's teacher-training establishments may adopt the new curricula and programmes in the following subjects: Russian Language and Literature, Native Languages and Literatures, Mathematics, Physics, History, Foreign Languages, Biology, Chemistry, Methods of Elementary Education, Teaching and Psychology (pre-school), Music and Singing, and Physical Culture. The new plans and programmes for the remaining subjects will be introduced from 1971-1972 onwards.

To improve the training of teachers, a new and more logical scheme has been devised, while greater importance is now given to psychology. From the next academic year onwards, all students will be required to attend lectures and do seminar and laboratory work on the themes: "An Introduction to the Science of Teaching", "Psychology as a Part of Teaching Methods, with Especial Reference to the Psychology of Different Age Groups", "General Psychology", "Physiological Changes in Children with Increasing Age, and School Hygiene", together with auxiliary courses in methods. Between 450 and 470 hours will be devoted, all in all, to the psychological aspect of teaching.

These efforts to improve teacher-training programmes are designed to bring programme contents into line with modern ideas in each subject, and to eliminate overlapping between subjects. They represent an attempt to select the material strictly necessary for the training of the future teacher of a subject, and to rid the programme of the superfluous. They are also designed to produce teacher-training programmes for those new subjects which are being introduced for the first time into school curricula.

To ensure that students are better prepared for practical school-teaching, the new programmes provide for more intensive teaching practice. Great efforts are made to make the teacher proud of his profession and to develop his powers of organisation.

Between 1968 and 1970 a great deal of work was done to improve the skills of teachers already in employment, and to prepare them for new programmes and textbooks.

There are, all in all, 169 advanced training colleges for teachers, and more than three thousand regional or municipal teaching-methods departments.

Between 500,000 and 600,000 teachers a year take advanced training courses in the advanced teacher-training colleges, or in teacher's training institutes and universities. Those teachers taking full-time courses keep their pay. They get a free ticket to the place where they are teaching, plus free board and lodging. Certain classes of teacher get a stipend. Persons taking these courses can go on excursions to other cities and Republics of the Union.

The publishing houses "Prosveščenie" and "Pedagogika" assist the teachers in coping with new material by publishing teaching material and textbooks. In each school subject, there is a journal on teaching methods, which deals with particularly knotty problems encountered in teaching the subject and gives teaching hints and tips.

VII. PROVISION OF MORE AND BETTER TEACHING EQUIPMENT

The changeover to general secondary education, and the introduction of new curricula, have meant further efforts to endow the schools with more and better teaching equipment.

Between 1967 and 1969, new school buildings were erected to accommodate 4,820,000 children.

In August 1963, the Council of Ministers of the USSR issued an ordinance: "On Action to Increase the Production of Audio-Visual Aids and Teaching Equipment and to supply them to Schools in the General Education System". By this decree, a number of ministries and departments are compelled to plan the annual output of audio-visual aids and teaching equipment for the general schools in accordance with orders from the Ministry of Education of the USSR, on the assumption that the requirements in every school have to be met, and met in full.

With an eye to the new curricula evolved, lists of audio-visual aids and teaching equipment have been drawn up and approved. Plans have been produced for the design and production of new equipment for schools and for the modernisation of existing equipment. Much importance is given to the production of equipment involving screens.

There is to be an All-Union competition for the design of aids and equipment in 1969-1970, the idea being to awaken the interest of teachers, research workers, engineers and technologists, schools, research institutes, Higher Educational Establishments and design offices in such matters.

It is considered very important that aids to teaching and other equipment should be correctly employed and used to the full.

A vast amount of work is being done on new school textbooks. Textbooks are issued in sixty-two languages spoken in the Soviet Union, and in many foreign tongues. More than 2,000 titles are issued every year, and some 300,000,000 copies are printed.

VIII. THE MANAGEMENT OF THE NATIONAL EDUCATIONAL SYSTEM

In 1967-1970, action was taken to render the management of the national educational system more efficient.

At present, responsibility for managing the educational system lies in the following hands:

- the Ministry of Education of the USSR (pre-school education, school education, and the development of the science of teaching);
- the State Committee on Vocational Training of the Council of Ministers of the USSR (vocational training);
- the Ministry of Higher and Secondary Specialised Education of the USSR (for secondary specialised and higher education).

The Ministry of Education of the USSR, created in 1966 (its authority extends to the Union Republics as well) is called upon to improve the administration of education throughout the country, making due allowance for the desires and aspirations of the Union Republics.

The basic tasks of this Ministry are as follows:

- systematically to create a Communist educational system for children and young people, and to pursue their moral, physical and aesthetic development;
- to give a lead in general secondary education, pre-school education and the development of the science of teaching throughout the country;
- to devise and implement plans to ensure the further development and improvement of the general educational system, and to make the requisite proposals to the Government;
- to draw up, in co-operation with the Councils of Ministers of the Republic of the Union, basic parameters and indices in connection with the current and future planning of people's education;
- to define the contents of general secondary technical instruction and instruction given to prepare young people for employment;
- to improve teaching plans and curricula for general secondary schools in accordance with scientific principles, and to prepare and issue in accordance therewith stable textbooks; to assist the Republics of the Union in improving the supervision they exert, as regards teaching methods, over schools, pre-school establishments and out-of-school institutions;
- to organise advanced training for teachers and other persons employed in the national educational system;
- to look after the international relations of the national educational system.

To ensure that the peculiarities of the Union Republics are fully taken into account, a Secondary School Council has been set up within the Ministry of Education of the USSR. The members of this body are the Minister, his deputies, the President of the Academy of Teaching Sciences of the USSR, and the Ministers of Education of all Republics of the Union. In connection with secondary schooling and everything to do therewith, the Council considers the most important problems arising in education: draft plans for educational development, government Bills relating to schools, standard curricula and programmes, the problem of how to promote the science of pedagogy and how to co-ordinate the activities of institutes doing research into teaching methods, basic enactments regulating the activities of schools and educational authorities, and so on and so forth.

Within the Ministry of Education of the USSR, there is a small committee made up of the Minister (in his Chair), his deputies, and various other senior officials, together with the President of the Academy of Pedagogical Sciences of the USSR.

This committee has regular meetings to consider everything to do with the development of education and teaching methods. It considers problems arising from the day-to-day management of institutions, organisations and undertakings, the drafts of the more important rules and regulations, etc., and hears reports from the directors of educational administrative organs.

Within the Ministry, there is also a Committee on Methods. This is made up of eminent specialists and scholars; scientific pedagogical societies and other organisations are likewise represented. The Committee is called upon to draft conclusions concerning curricula, textbooks, audio-visual aids and other teaching equipment. It also has to draft recommendations to ensure that full use is made of the latest achievements of pedagogical science.

The whole point of modernising educational curricula and methods is in the last resort to further the intellectual development of the pupil, and to ensure that he or she has a surer and a profounder grasp of the principles of science. Accordingly it is of no little importance that there should be some means of defining and assessing the quality of the work done by schools and teachers and the knowledge acquired by the pupil. Since the new curricula and new methods were introduced, it follows that the school inspector has had a more important part to play. In recent years, therefore, action has been taken to make inspection more effective and to reinforce the work done by the methods departments of regional education authorities and by the advanced teacher-training institutes run by municipal, district, and Republican authorities. The Academy of Pedagogical Sciences of the USSR devises criteria for the assessment of the effectiveness of teaching methods and of the quality of the knowledge acquired by pupils in the various school subjects.

The educational authorities devote especial attention to improving the efficiency of rural schools. They try to ensure that circumstances are propitious for the introduction of the compulsory eight-year schooling period and for general secondary education, and that these schools get the requisite teachers. They ensure that such schools are supplied with teaching equipment and audio-visual aids, and look after the building of classrooms, of dormitories and accommodation for boarders, houses for teachers, etc. For example, under existing legislation, teachers and their families get free accommodation, fuel and light, while drawing the same pay as the teacher in town or city.

The Soviet school is a people's school. It is bound by a thousand invisible links to the pupils' parents, to public organisations, and to the people as a whole.

There are parents' committees working in the schools. In factories and work sites, in organisations and collective farms, there are committees or boards through which parents can co-operate with the school authorities in the education of their children, in vocational guidance, and in the organisation of clubs and societies. These committees, in which the school authorities are represented, bring pressure to bear on parents guilty of neglecting their offspring's education. The children's offices run by trade unions and cultural clubs also give the schools a great deal of help. In many of these institutions there are educators whose job it is to organise children's activities at their place of residence.

The task of educating a child thus has many facets; the school acts as a centre of organisation. The teachers spread pedagogical knowledge among parents and in society at large.

IX. THE DEVELOPMENT OF PEDAGOGY

It is most important that scientific research into pedagogical problems should be increased if teaching methods are to be improved.

In the Soviet Union very great importance is attached to such research. In 1967-1968, a body known as the Academy of Pedagogical Sciences of the USSR was organised. It is now one of the biggest research centres. It has twelve research institutes dealing with general teaching problems, curricula and methods, technical equipment, aesthetic education, technical training, education for employment and vocational training, pre-school education, adult education, problems of general psychology and of psychology as applied to teaching, physical culture and the physiology of the growing child.

Besides which, each of the Union Republics has its pedagogical research institutes which deal with general teaching problems and the teaching problems peculiar to the Republic concerned.

The teachers' training colleges, too, are very active in research. All in all, some 30,000 people are working on pedagogy and its problems.

In the last few years, the specialists have been especially interested in problems arising from the changeover to new curricula and new textbooks, and new teaching methods.

They have been concentrating on the publication of hints and tips for teachers, and on the improvement of teaching methods.

One of the major tasks now facing our national educational system is that of working out a scientific prognosis of its development, which could serve as a foundation for future planning.

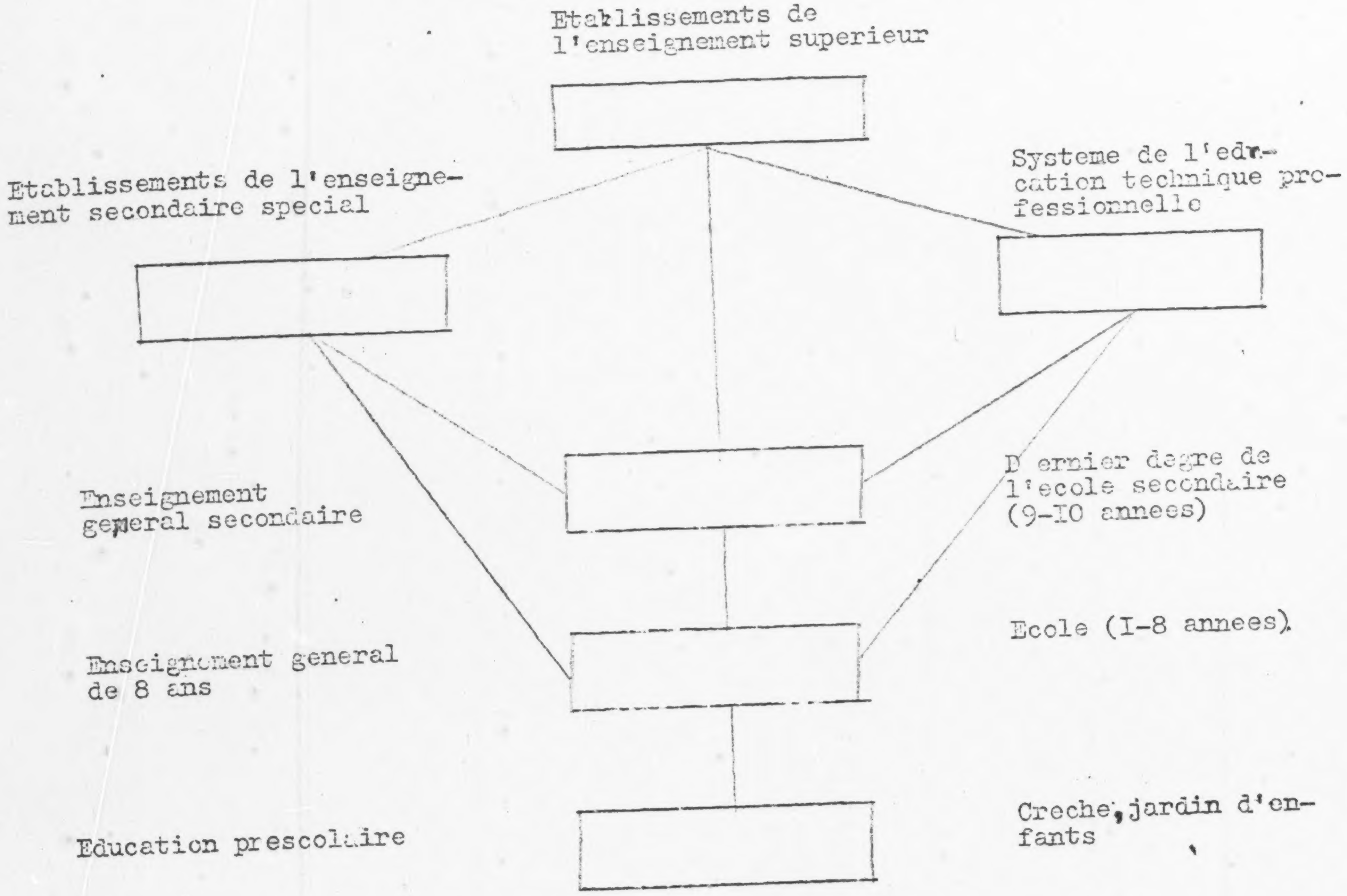
Hence a technical committee, presided over by M.A. Prokofiev, Minister of Education of the USSR, has been set up. It will embrace specialists from all branches of the national education system, and will have as its terms of reference to consider "Economic and pedagogical questions involved in raising the level of general and specialised education and training in the USSR".

Much has been done - much is still being done - to study the Communist education of children and young people and to ensure its general spread. Much has been done to consider the problems involved in producing a Communist outlook, and to improve the quality of the work done by the Komsomol and Pioneer organisations in the schools.

All-Union teachers' seminars have now become traditional. At these gatherings, teachers and other persons concerned with the national educational system read papers and reports on matters to do with teaching methods.

At the same time, scholars frequently give lectures to teachers, or submit reports, on the achievements of science. The outcome of scientific research is embodied in reports, which are then published in very large numbers. These are made use of by educational establishments in the national system for the organisation of their work.

In this fashion, the science of teaching is developing step by step with practice.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Working Paper on

VOCATIONAL TRAINING IN THE GEORGIAN SOVIET SOCIALIST REPUBLIC

by

M. CHIHADZE - Chairman, Govermmental Committee
on Technical Training of the Council of Ministers
of the Georgian Soviet Socialist Republic, Tiflis.

Georgia is an ancient country, rich in a history which goes back many centuries. The Georgian people have produced a vivid culture, all their own, and the history of the development of trades and occupations is just as rich as the history of the Georgian people

On 25 February, 1971, we shall be celebrating the fiftieth anniversary of the foundation of a Soviet Government in Georgia. Since that time the country has undergone profound changes, becoming one of the most advanced of the socialist republics. Following in V.I. Lenin's footsteps, the people of Georgia, along with all the other peoples of the USSR, have made great strides in the development of their national economy.

Georgia today is a republic in which industry and agriculture alike are highly developed. Scientific achievements have been outstanding, and the level of education is high. In the last half-century, during which a Soviet system has held sway in Georgia, more than one thousand new undertakings, in various branches of industry, have been founded. As much electric power is now produced in a single day as was produced before the Soviet era in a whole year. More than two hundred kinds of industrial goods today form an important part of the Soviet export trade. They include metal-cutting lathes, steel tubes, precision instruments, electric welding equipment, floating dredges, ships, tea, wine and so forth.

The development of industry and agriculture (including the growing of tea and wine-production), have provided for an increase in the standard of living. Soviet Georgia, too, is very rightly proud of its numerous scientific institutes and centres of higher education, its theatres and other cultural institutions.

The leading force in society in Georgia, as throughout the Soviet Union, is of course the working class. Its ranks are always being filled up, and one of the basic channels through which Georgia receives reinforcements of young workers is the vocational training system. The system has its own history and traditions, intimately bound up with the development of the country.

The history of factory training and apprenticeship in Georgia begins in the nineteenth century. In 1876, the first trade school was opened; it offered a four-year course. In 1880, a larger trade school, embracing an elementary school as well, was opened. But the system, right up to the victory of the Soviet system in Georgia, was little developed. The few establishments that existed were poorly housed and had to struggle for existence.

From the very outset of the Soviet regime, the workers were faced with a task of daunting proportions - namely, to put an end to backwardness and neglect, and to reconstruct the national economy on new, socialist lines, the greatest importance, of course, being given to industrial development. In many undertakings at that time, technical training courses were begun, with a view to providing the skilled labour needed by industry. The "Kamo" technical apprenticeship school in Tiflis is almost as old as the Soviet regime itself. In 1925, the "Leninist Komsomol" railway technical training school was founded. Seven factory schools were in existence by 1925-1926. But this was not enough to provide the skilled labour required, at a time when five-year plans were beginning and a vast amount of building, including the construction of new undertakings and the development of new branches of industry, was under way.

The need arose, therefore, for some central system of guidance, able to maintain those good things which had been accumulated over the past few years.

The creation of a system of "State Labour Reserves" marked a major step forward in the process of tackling vocational training problems. Provision was made for a contingent of youths from town and country to be called up every year; trade schools, railway training schools, offering a two-year course, together with factory schools offering a six-month course, were set up.

Thus summoned by their country, thousand of boys and girls came forward. The young people, having passed through these "labour reserve" schools, were systematically apportioned among industries and areas. This was an excellent start in providing industry with the skilled labour force it required.

In Georgian industrial towns, trade schools, offering a two-year course, were set up by ministries, government departments and industrial undertakings, to train skilled metal workers, building workers, miners and others. Two railway training schools, offering a two-year course, were also set up. Ten factory schools were founded for the training of workers in the mass occupations.

The first contingent of trained young workers was of great significance for the Republic. The facts convincingly showed that the new vocational training system was paying off.

In 1941, the network of "labour reserve" schools and other establishments was extended. Six new trade schools, one railway-training establishment, and two factory-training schools were opened. On the outbreak of war, in addition, trade and factory schools were evacuated from Leningrad, the Dnepropetrovsk and Rostov oblasts", and from the kray" of Krasnodarsk, and transferred to Georgia.

During the War, the first contingent of skilled workers left the eleven trade schools and railway-training establishments. Already in the workshops, they had been taught to cope with war work; they now left for the production lines, as experienced fighters on the labour front. During the war years the Government posted these labour reserves to such branches of industry as were most important for the war effort; wherever these workers went, they honourably fulfilled the hopes entertained of them by the nation and its government. All in all, the trainees in "labour reserve" schools and establishments turned out war supplies and armaments during the war years to the tune of over one million roobles.

During the war years, too, numerous trainees and ex-trainees from the Georgian "labour reserve" schools took an active part in restoring plant put out of action by hostilities. Thus, for example, a big contingent of young people from the training schools in Tiflis was sent to restore the Yenakiev metal works. For the outstanding work it did in this connection, it was awarded a Red Banner, First Class, by the Government Defence Committee.

The network of training establishments was extended. Schools and establishments of a new kind were set up. As early as 1943, training schools were opened in Tiflis and Batum for children of those who had fallen in battle. After the war, an "arts and crafts school", offering a three-year course, was opened in Tiflis.

During the war, of course, training had to be accelerated, but afterwards there was no longer any justification for training on narrow lines.

In March, 1946, a law was enacted for a five-year development and economic restoration plan for the economy of the USSR, to run from 1946 to 1950. Provision was made therein for an extension and improvement of the vocational training system. Attention was chiefly concentrated on the quality of the training in vocational training schools. There was a great increase in the numbers of skilled young workers turned out by factory, trade and railway-training schools. New workshops for training purposes were built, while existing premises were entirely re-equipped. Generally speaking, the training establishments dealt with their own technical re-equipment.

So that the technical schools should enjoy the services of highly-skilled instructors, a Labour Reserve Industrial Polytechnic was opened in Tiflis in 1945, to produce instructors in industrial and civil building, metal-cutting, the assembly and repair of industrial equipment, and the construction of radio apparatus. By this means the schools could be sure of getting instructors who really knew their job.

In 1949, a teaching methods section was set up within the Republic's Labour Reserves Administration to organise the work done by technical training instructors on more methodical lines and to assist such persons in improving their technical and instructional qualifications.

While teaching procedures were being improved, training establishments of new kinds were being evolved to meet industry's need for skilled personnel. From 1953 onwards, great attention was given to turning out specialists in the upkeep and repair of agricultural machinery, on a large scale. This was a new page in the history of vocational training.

The technical training establishments founded in 1954 represent a very special kind of establishment within the State labour reserves system. They cater for young people who have finished their secondary education, turning them into highly skilled workers and junior technical staff.

"Special schools" are another kind of training establishment. Their task is to provide education and vocational training for orphans. The young people in such schools get a general education in accordance with that given in the various classes of the secondary schools, besides a special technical training.

A report by the State vocational training authorities of the Union mentioned the transformation of all our vocational training establishments into establishments in town and country which would specialise in certain branches of production. This decision was reflected in the activities of the educational establishments of Georgia, where the State vocational training system became an integral part of the national educational system.[1]

At present, the State Committee on Vocational Training of the Georgian Council of Ministers, and the educational organisations thereof, are very active in the creation of schools which will provide young people with a complete secondary education as well as a technical training.

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[1] See the paper by A. Shevchenko, on vocational training in the USSR.

Our State Committee has been in existence since 1962; it is in fact the old Labour Reserves Administration in a new guise. The Committee directs the training, as skilled workers, of young people who have completed eight years' schooling and their secondary education. It provides systematic help for ministries and departments in the vocational training of workers on the job and bears full responsibility for the present state and further development of the Republic's vocational training system. In all republics of the Union, such State Committees exist. They are responsible only to the Vocational Training Committee of the Council of Ministers of the USSR.

The State Vocational Training Committee of the Council of Ministers of the Georgian Soviet Socialist Republic itself directs the training activities and internal administration of educational establishments and other organisations subject to its jurisdiction. It keeps a check on the quality of the skilled workers turned out in vocational training establishments throughout the Republic, no matter to what organ of government such establishments may be responsible.

Within the State Committee, there is an inner circle of seven members. At its meetings, it regularly reviews all matters to do with vocational training, the management of training schools and organisations, the selection of skilled workers; it likewise considers reports by subsections of the State Committee together with inspectors' reports on conditions observed by them in vocational training schools.

The vocational training system, founded in October, 1940, has now existed for thirty years. In that time more than 200,000 skilled workers have been trained for the Republic, 68,000 of them within the last five years (i.e. between 1966 and 1970).

The development of industry and agriculture on up-to-date lines implies a further extension of vocational schools and an increase in the numbers they cater for. In 1959, there were 29 such schools training 5,735 persons. In 1965 there were 41, catering for 12,334 people. Today (1970), there are no less than 64 such schools, coping with 30,000 pupils.

Skilled workers are turned out in 180 trades and occupations for thirty-eight ministries and departments. There are nine vocational schools training secondary school-leavers as skilled workers.

There is a need, in fact, for yet further schools, and for an enlargement of those already existing. Between 1966 and 1970, provision was made for another 6,080 pupils. Dormitories and lodging houses for 4,800 people were constructed and some 11,630 million roobles were expended for such purposes.

Today, there are more than 250 instructional workshops operating in our vocational training establishments, with 400 laboratories and classrooms, equipped with all requisite tools, equipment, and audio-visual aids. The State Committee organises the release of textbooks, handbooks on teaching procedures, and audio-visual aids, and sees that the vocational training establishments are duly supplied therewith. There is an All-Union Trust which devises audio-visual aids, classroom and laboratory equipment, and articles on which trainees can practice their skills.

As a result of all this, the training given is now of higher quality. In vocational training workshops, trainees are taught how to do work of a fairly complex kind (metal-cutting lathes - screw-cutting machines, boring machines; the production of pig-iron castings; the manufacture of gauges, clamps and metal-worker's instruments; production of articles for the laboratory and classroom and for everyday life; production of clothes, printed matter, etc.). Production for industrial undertakings is carried on on a large scale (parts for motor vehicles, metal-cutting lathes, plastic goods, clothing, boots and shoes, etc.). Trainees get production practise in industrial undertakings properly so called, where they are provided with places on the production lines and work in accordance with the programmes of instruction. They are provided with the requisite tools and equipment, technical literature, and semi-finished goods, and they work in accordance with recognised safety procedures.

In the last ten years alone, produce to the value of more than 60 million roobles has been manufactured by trainees in training school workshops and in the course of production practice in undertakings.

During production practise, trainees acquire new, up-to-date techniques and acquire an insight into high productivity working procedures. However, vocational training does not just turn a man into a highly skilled worker; it is designed to turn him into an educated all-round personality with broad horizons and interests.

This is why the organisations run by the Komsols, the unions, and others take so much trouble to inculcate self-discipline and conscientiousness. They are responsible for a good many initiatives designed to increase the part played by young people in production, while broadening their horizons. They spend a great deal of effort on creating and equipping classrooms and training workshops, amateur clubs, etc., and do much propaganda work for science, technology and advanced techniques. They do a vast amount, in all sorts of different ways, to assist in the ideological training of pupils and in the organisation of their leisure time.

In Georgia, as throughout the Soviet Union, there are the traditional regular meetings with production innovators and persons of note; excursions to factories, building sites and collective farms are organised; there are talks on technical subjects; friendly evenings are organised, attended by the staff of industrial organisations and undertakings properly so called; and meetings with ex-pupils are arranged.

In Georgia today there is not a single branch of industry; there is not a single undertaking in which former pupils of our vocational training system are not to be found. Amongst them are Heroes of Socialist Labour, Deputies of the Supreme Soviets of the USSR and Georgian SSR, persons who have been awarded state prizes, and industrial innovators. Amongst the ex-pupils there are not a few who have gone all the way up the ladder from a humble worker on the production lines to the manager of an undertaking. Many ex-pupils are now vocational training instructors themselves.

Our vocational training establishments take a good deal of trouble in organising pupils' leisure time. To this end, various clubs (of amateur artists, technicians, and so on) have been set up. There are several thousand pupils in more than two hundred clubs and societies who profit from the guidance given by experienced instructors, and the work they do has won high praise. For example, at an exhibition of articles produced by Georgian vocational training pupils in Moscow the goods and articles produced by these clubs are on show. Our best vocational schools and their most outstanding pupils have on a number of occasions been awarded the gold, silver and bronze medals of the VDNKH (All-Union Exhibition of Achievements of the National Economies of the USSR) and the "Young Exhibitor's Medal".

Articles produced by our vocational trainees have been shown at the World Fairs in Montreal and Osaka.

In Georgia, there is a Cultural Club which gives a great deal of assistance to educational establishments and to the amateur artists' clubs within them. More than five hundred trainees take an active part in the work of the clubs within the Hall (there are choirs, ballet-troupes, amateur theatricals, painters, brass bands, poetry groups, literary circles, and clubs for persons interested in photography, radio and the cinema). The amateur teams run by the Culture Clubs have become widely popular, not only within our vocational training schools, but in society at large. They make tours within the Republic to give concerts, recitals, exhibitions, etc., in town and country, with considerable success. More than 4,000 trainees are active in the amateur clubs and societies existing within the vocational training establishments. Every year there are in the Republic exhibitions by amateur artists. In all-Union exhibitions, too, our clubs have always done very well indeed.

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In Georgia, a council of the "Labour Reserves" Society concerns itself with the physical training of vocational training pupils. This society has more than 25,000 members and staff. There are central departments within the society which deal with fifteen different kinds of sport. Fifty experienced trainers are at their disposal. Large-scale physical culture and sports activities exist within the vocational training schools.

The State Committee on Vocational Training devotes great attention to the choice of administrative officers and technical training instructors for the vocational training school. Generally speaking, to be a director, deputy director or lecturer, a man needs a higher education; a "Master of Technical Training" requires a higher or a secondary education. More than a hundred people, in Georgia, are entitled to call themselves "Zaslujhyoni Uchitel" ("Senior Lecturer" or "Lecturer with Distinction"), "Master of Production Training", Agricultural Machinery Upkeep Specialist, Agricultural Engineer and Engineer.

The All-Union Institute for Higher Qualifications, and its branches (there is one in Tiflis) organises advanced courses for managers and technical staff of vocational schools.

For the work it has done in producing skilled workers for the national economy, Municipal Vocational School No. 6 in Tiflis has been awarded the Red Banner of Labour.

This year, the Hidistavsk Agricultural School No. 15 has been awarded the Lenin Anniversary Diploma offered by the Central Committee of the Communist Party of the USSR, the Presidium of the Supreme Soviet of the USSR, the Council of Ministers of the USSR and the All-Union Central Committee of Trade Unions. The Rustavsk Municipal Vocational School No. 3 has won the Lenin Anniversary Diploma offered by the Central Committee of the Communist Party of the Georgian SSR, the Council of Ministers of the Georgian SSR, and the Presidium of the Supreme Soviet of the Georgian SSR. The Tiflis Municipal Art Training School No. 11 has been awarded a First-Class Certificate and the Red Banner of the Central Committee of the All-Union Leninist Union of Communist Youth.

Many of the staff employed by the system have been rewarded for long and faithful service in training skilled workers by the award of state decorations, orders and diplomas.

It is hoped to extend the vocational training system still further and to give it an even greater part to play in meeting Georgia's need for skilled workers.

The steep rise in the number of young people with a secondary education, and the keenness of so many young people to complete their secondary education, call for an increase in technical training establishments, on the one hand, and of vocational schools to turn people into skilled workers (while giving them a secondary education, which this latter type of educational establishment is a major means of doing), on the other.

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Working Paper on

POLYTECHNICAL TRAINING FOR WORK IN THE TADJIKISTAN SCHOOLS

by

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Before the revolution there was a total of 10 schools with 368 pupils and 13 teachers in the territory of Tadjikistan. The pupils' parents belonged to favoured social classes. The schools were religious in character (Muslim) and not equipped for preparing young people for life and work.

From the time the Soviets came into power steps were taken to establish a new type of school. This was based on the principle of making education polytechnical and introducing the mother tongue (tadjik) as the language of instruction.

In 1969-70 there were 2,833 schools of general education in the Tadjik SSR, 2,490 being in rural areas. In Tadjikistan, as in the USSR as a whole, the general education schools are gradually adopting systematically the new educational plans and programmes which provide for pupils to study basic sciences from their fourth year of schooling.

The common basic schools (8 years of schooling) and the general secondary education schools (which continue from common basic school and give two-year courses - 9th and 10th years of schooling) have workshops for metal-work and wood-work. Most of them also have sewing rooms, laboratories for electrical techniques and radio, and domestic science rooms. All of these workshops, rooms and laboratories are equipped with the material (machine-tools for turning, drilling and milling, carpenter's and fitter's benches, sewing machines, etc.) required for carrying out the tasks included in the syllabus. These schools also have the agricultural material which enables the pupils to till the soil and carry out agricultural experiments on land provided near the schools. The teachers who give training for work (trudovoe obučenie) lessons are trained in pedagogical institutes (physics-mathematics departments, sections for physics and general technical subjects teaching). Training for teaching staff is also organised in industrial technical and pedagogical colleges (industrial'no-pedagogičeskij tehnikum) as well as in vocational education establishments.

The teachers of training for work are given further training in the form of part-time courses extending over one year or full-time courses lasting one month which are organised at institutions for further teacher training. These teachers can also improve their qualifications by taking part in the meetings of urban and rural methodological associations for groups of schools.

Teachers of training for work maintain close contact with instructors in vocational schools and regularly attend courses and meetings of the methodological committees of these schools.

Training for work is one of the main elements in the education of a polytechnical nature which has been devised for pupils of general education schools. It is designed to give pupils a wide range of knowledge of work, including specific abilities and skills, to develop their aptitude for technical creativity and agricultural experimentation, and their respect for and recognition of the importance of work. It helps pupils to decide on the field in which they will work in the future.

The following basic principles govern training for work: the training is polytechnical in character, it is associated with study of the basic sciences, it involves a creative attitude towards the tasks to be carried out, the pupils' work is socially useful.

Application of the principle of polytechnical education to training for work requires systematic analysis of the basic sciences with a view to determining the elements which are common to all techniques, technologies and different ways of organising production. It is essential for these elements to be included in the tasks carried out by the pupils in their training for work which thus reflects the application of the principle of polytechnical education. The close association which has been established between training for work and the instruction in basic sciences which pupils receive in parallel enables them to apply their scientific knowledge when working with different mechanisms and machines and to understand the principles underlying their operation properly. Training for work gives pupils considerable possibilities of applying their knowledge, it enables them to understand the nature of the links between theory and practice better.

Training for work consists of three stages: lessons in manual work - first to third years of schooling; training for work - fourth to eighth years; training for work - ninth and tenth years. As indicated in earlier papers (cf. papers "The general schools system in the USSR" and "Training for work, vocational education and vocational guidance in the general school"), training for work during the first two stages is of a fairly elementary nature. It is designed to develop pupils' basic abilities and work skills in regard to techniques, agriculture and the services. This training is generally given in school workshops and laboratories as well as on school plots for agricultural education and experimentation.

Two hours per week are devoted to training for work throughout the years of schooling (from the first to the tenth). The tasks included in the syllabi of training for work are chosen in the light of pupils' physical possibilities and interests. From the first to the third year of schooling, pupils work with paper and pasteboard; they make models, build and plait different articles, work with leaves of veneer and with wood, as well as working on school agricultural plots and carrying out different jobs relating to service occupations.

The various types of work listed have been designed with the aim of enabling the pupils to acquire knowledge and skills by doing what will be useful to them both at school and at home. They involve pupils making toys, educational aids, household articles etc. By working with paper and pasteboard, they learn to know and to distinguish the properties of materials, to do marking, to cut out, to make collages, to use scissors and knives, etc. In this way they develop manual precision and co-ordination. They also learn to do very simple sewing and to make a variety of toys using needle and thread, as well as articles necessary for household work. Modelling, building and plaiting are the children's favourite occupations. While doing these they familiarise themselves with different materials (clay, rattan, little wooden sticks). Modelling develops the children's sense of form, fancy and imagination.

Pupils in the third year of schooling do work on wood or with leaves of veneer, etc. They learn to mark and to saw these leaves of veneer and to use them for making toys and educational aids. When working wood (mainly planed slats, little sticks, trimming of boards), they study the properties of this material and ways in which it can be used. They familiarise themselves with very simple tools, learn to use them and to maintain them. Work is also organised for the pupils which requires the use of different materials which they are taught to use in combination. This work is organised with a view to developing technical creativity, inventiveness and imagination.

Work on the agricultural education and experimental plots near schools and in the "exhibitions of the animal and vegetable kingdom" (ugolok Živoj prirody) occupies most training for work given in primary education; it is closely linked with the subject matter of the lessons in their mother tongue and with ethnographical knowledge of the region concerned. During these lessons the teacher describes work in the fields and gardens; during their training for work the pupils learn to carry out the same work activities. Work on the school plot and in the "exhibition of the animal and vegetable kingdom" also provides good relaxation after the lessons in the classroom as well as developing a love of physical work in the pupils.

The objectives of training for work become much more ambitious as soon as the pupils enter the fourth year of schooling which is the first in a five-year cycle (up to and including the 8th year). A considerable increase in the volume and content of training for work is therefore necessary. During these school years training for work is called upon to give pupils basic knowledge of tools, machines and control and measuring instruments used in modern production, to give them the skills necessary for a large number of useful tasks and to help them to choose their future occupation.

The knowledge which the pupils acquire in mathematics, physics, chemistry, biology and drawing lessons is used during this stage of training for work. Considerable attention is devoted, when in the school workshops, to studying different materials and particularly their properties and special characteristics. Study of tools, apparatus and machinery is not limited to how they are used in practice; the pupils are also taught how they are made, what they are used for, the principles governing their operation, their setting and their maintenance, as well as the safety rules involved and the need for strict observance of them.

Particular attention is devoted to developing a technical spirit. Pupils are also initiated into the requirements of "work culture" which workers have to meet, the aim being to develop aesthetic taste with respect to work. Because of the requirements and necessities of active life, the content of the training for work syllabi from the fourth to the eighth year of schooling has been planned in a number of variants. One is designed for boys (wood-work and metal-work) and another for girls (sewing, knitting and housework).

Because of the considerable diversity in local conditions and in the schools' facilities other variants of training for work syllabi deal with work in service occupations, work in technical fields and in agriculturel Pupils in the fourth to the eighth year of schooling learn during their training for work lessons: woodworking procedures (marking, sawing, planing, drilling, grooving). This includes work with machines: they learn to use lathes and other machine-tools (planing machines, drilling machines and milling machines).

Metal-work begins with making articles in iron wire and tinplate. These are simple operations which the pupils can manage. They study the particular characteristics of these materials and the tools employed. Fitting is the most important among the metalworking activities; but machine-tools of various kinds are also studied.

During their training for work pupils of the seventh and eighth years of schooling make the material necessary for the work carried out on the school plots for agricultural education and experimentation. Manufacturing this material helps to develop pupils' technical spirit, encourages creative initiative and develops inventiveness.

Boys in the fourth to the eighth year of schooling follow the training for work lessons dealing with housework with great interest. During these lessons they become familiar with the equipment used in a sewing workshop and in a kitchen equipped for instruction, as well as with the various kinds of work carried out daily in the household: cleaning and ironing clothes, using a washing machine. In the kitchen used for instruction pupils prepare meals, wash the dishes and clean. They also learn to use electrical household equipment and to respect the relative safety standards.

Training for work for girls has a special character; the programme of the various working activities which the girls will have to carry out is approved both by the parents and by the girls themselves. Sewing and embroidery take up the largest proportion of hours; they learn to know the various kinds of fabrics and the ways they can be used, how to sew by hand and with a sewing machine, and they study the construction, maintenance and setting of the machines. They sew clothes and make pedagogical aids in cloth. They also learn to embroider, to knit and to match the cotton and other sewing threads used. During the training for work lessons devoted to the household, they learn how to put residential and working accommodation in order, to look after clothes and to wash the household linen. The knowledge which the girls acquire during these training for work lessons is then used in their daily housework at home and in the collective services organised at the school, as well as in carrying out work of social utility and during their production practice (proizvodstvennaja praktika). This training for work for girls helps to develop their aesthetic taste and gives them a love of cleanliness and order in addition to knowledge which is useful for making their homes attractive and for decorating public places.

The girls greatly enjoy the cooking lessons. During these they learn about the elements which make up the principal foods, the principles to be applied in drawing up menus and diets and in preparing meals. They learn to lay the table, to keep the kitchen and the dishes clean and tidy and how to behave at the table. They use the knowledge and skills acquired for preparing meals at home, at school camps and during excursions, etc.

Training for work for girls is not limited to the above activities. They also work in workshops where they gain knowledge and skills in connection with wood-work and metal-work.

The training for work given to pupils in the ninth and tenth years of schooling is based upon thorough study of a general scientific and polytechnical character of the techniques and the technology of a particular work field. This pre-vocational training, which comes close to being real training, includes technical and scientific practical work activities (naučnotehničeskij praktikum) which are organised in the schools' workshops and laboratories or in neighbouring undertakings.

The content of the practical work has to be directly linked with instruction in a given general subject (physics, chemistry, biology); the training for the pupils has to be essentially of a practical nature. The fields with which

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these work activities are concerned depend on the schools' local conditions (neighbouring undertakings, etc.). The schools' pedagogical council generally recommends pupils in their ninth and tenth year of schooling to choose one of the following fields of practical work: technical drawing, study of motor vehicles or tractors, electricity, radio, chemical technology, mechanical technology, plant cultivation, stock-raising, etc.

Work of social utility is an important part of polytechnical training for work. The social utility character of the practical work performed by pupils has been included in the syllabi of general secondary schools. This is the case both for work in the workshop and for the work activities carried out on the school plots for agricultural education and experimentation, as well as the work carried out during production practice (this is organised for pupils in their ninth year of schooling). The school encourages the pupils to do socially useful work during their out-of-school activities: protection of nature, development of green areas near the schools, protection of historical monuments, participation in agricultural work, carrying out creative work in a technical field, etc.

The pupils help to repair the furniture and school premises and the didactical material; they prepare training aids and grounds for sport and games in the open air, maintain these grounds and carry out various work activities in the kolkhozes and the sovkhozes.

Lengthy experience has shown that pupils' performance of work within the framework of a well-organised collective service (making teaching aids for school classrooms, building sports grounds, fitting out greenhouses) is an important, in fact, essential element in their education. It enables them to learn and to love and respect work and to consider it as a daily necessity. The pupils' out-of-school activities in technical creation groups etc. as well as their participation in competitions, contests, and the organisation of exhibitions, help considerably to develop their interest and to deepen their knowledge.

From the seventh school year until the tenth inclusive, pupils can follow optional courses according to their preferences. By this means they can round off the content of their education and of the polytechnical training for work organised for them. During the year 1969/70, the general education schools in Tadjikistan gave more than 2,200 optional courses to nearly 113,000 pupils.

One series of schools provides classes of extra instruction in physics, mathematics and foreign languages.

The pupils of general secondary schools receive a training for work which prepares them psychologically to carry out productive work and teaches them to work systematically and organise their work properly. During this training, the pupils have the opportunity of being in direct contact with the workers in the undertakings and thus to realise the importance of work. When conditions permit, the pupils of general secondary schools receive vocational training in addition to their training for work.

The brigades established in the kolkhozes and the sovkhozes constitute rural pupils' main forms of participation in agricultural production. Work in these brigades, which has the great advantage of developing a love for agricultural work in the pupils, also helps to improve their knowledge, because they carry this work out in close association with the instruction in basic sciences which they receive at school. The pupils in the brigades are well prepared for work in agriculture, learn to recognise the importance of work and ownership by the society and get accustomed to organising their work and their rest hours rationally. The members of the brigades are assigned plots for experimenting with crops, particularly for cotton crops. They also experiment with the composition of fodder for the livestock and help the kolkhozians in their work.

Considerable attention is paid to the rational use of working hours, to the observance of technical standards governing work in agriculture and of safety regulations, to the maintenance of the tractors and agricultural machines and to the workers' personal hygiene. The pupils in the brigades come into contact with outstanding agricultural workers, they organise artistic activities, sports contests, etc. They also participate in the cultural activities organised for the kolkhozians and the workers in the sovkhozes.

The work of the brigades of pupils in the rural general education schools in the region of HodŽentskaja can be mentioned as an example. In this region five production brigades have been established which group pupils in three school years (from the seventh to the ninth year). These brigades cultivate cotton on an area of 42 hectares (one hectare = 2.47 acres).

The necessary machines and fertilizer have been made available to the brigade which works under the supervision of agricultural specialists and teachers. The pupils themselves manage questions relating to work and social order which affect them. The brigade follows a timetable providing for four hours of work in the fields (cotton cultivation) per day, the remainder of the time being used for the organisation of group cultural activities and sporting activities. The number of pupils in a brigade varies between 25 and 80.

The pupils in the general secondary schools in the region of Kumsangirskaja have expressed their intentions of becoming agricultural mechanics. The pupils in the terminal classes (tenth year of schooling) have been divided into groups to study tractors and motor vehicles. The courses take place twice a week for six months under the direction of engineers and technicians who are specialists in agricultural production. A total of 270 pupils in these groups have thus become professional tractor drivers and more than 190 have become professional drivers of motor vehicles, they are all working at present in their home kolkhozes.

Girls have also learnt the trades involved in agricultural mechanisation.

During the summer holidays work and rest camps as well as sports camps are organised for the pupils of urban schools in the kolkhozes and sovkhozes. These pupils take part in agricultural work within the limit of their strength and sporting and cultural activities of various kinds are organised for them.

The work and rest camps and the sports camps, where work and rest are scientifically planned for the pupils by experienced teachers and activities of social utility alternate with periods of relaxation, enable the pupils to have interesting and useful holidays.

In order to improve training for work for the pupils of general secondary schools in Tadjikistan, arrangements are currently being made to introduce into the syllabus of terminal classes courses on driving motor vehicles, tractors and agricultural machines as well as courses teaching the bases of agricultural and stock-raising techniques.

When they are studying basic sciences at school or during their training for work lessons, when they are reading, looking at television, taking part in excursions, or chatting with their parents or friends, the pupils receive a great variety of information on the most common occupations, including their characteristics and special aspects. They are well informed on some occupations, less well on others. The schools organise action designed to familiarise pupils systematically with the most important occupations, in order that they may have an accurate idea of that they involve. The pupils learn to know what the needs for workers are in such and such occupations, the role which the various occupations are called upon to play in the economy of the region (or of the town), likely trends of development in the occupations and the existence of related occupations. They also learn to know the nature of the work involved in the various occupations, their psycho-physiological characteristics and the corresponding counter indications.

The school helps the pupils to choose reading matter describing occupations which interest them and acquaints them with the undertakings where these occupations are practised, as well as the working conditions: work posts, wages, holidays, social security.

For the purpose of deciding on the occupations to be covered by vocational guidance for the pupils, the teachers study the region's economy thoroughly, taking into account future plans for the development of the national economy and their repercussions on the economic development of the region (or city) concerned. The teachers also take into consideration the pupils' occupational interests as disclosed in the classroom or during activities in the workshop etc.

The success of vocational guidance for young people depends to a large extent on the methods used by the school. The following methods are most frequently used: establishment of "vocational guidance exhibitions" (ugolok po proforientacii); visits to undertakings, to kolkhozes and sovkhozes; open days at different school establishments, lectures on the subject "what should I become?", competitions on the best work in a given occupation.

The school press and radio take an important part in familiarising pupils with the various occupations.

All these activities are directed by vocational guidance councils under the school, municipal and regional authorities and by the State Council (Tadjikistan).

Training for work in the general education schools and the vocational guidance these schools provide for their pupils play a decisive role in preparing the pupils for active life, for work and for choosing an occupation.

The pupils of common basic schools and of general secondary schools leave these schools with the knowledge and skill required for work; most of them thus enter the country's economic activity directly. During the last four years

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(1966-1969), 133,000 boys and girls, 54,000 of whom were from general secondary schools, entered economic activity in Tadjikistan. In 1969, close on 30,000 boys and girls were taken on by undertakings in the national economy, half of them had received full secondary education. Of young people entering the national economy, 60 per cent have received production training in the undertakings, the kolkhozes or the sovkhozes.

The question of how polytechnical training for work for pupils of general secondary schools can subsequently be improved is one of the major preoccupations of the Ministry of Education and its institutions. The problems involved are the subject of systematic discussions during meetings of the councils of the urban and regional sections of the Ministry of Education and of the heads of service in the Ministry. The Scientific Institute for Research into Educational Sciences is engaged in preparing new syllabi for training for work for the pupils and methodological aids for teachers. This Institute is also concerned with disseminating the experience which has been gained in connection with training for work. Further training for instructors giving training for work is organised in six institutions for further teacher training. This further training is also one of the activities of the "methodological offices" in the Ministry of Education sections.

Our present aim is for all pupils to leave school with a wide range of knowledge on the bases of modern industrial and agricultural production and the highly developed techniques used in these various forms of production. We still have a lot to do to improve vocational guidance for the pupils. In order to contribute to the development of polytechnical education and education linked with work, we are going to encourage and develop technical creation, the work of young naturalists, the work of agricultural experimentation and the work of production teams.

In view of the trend towards secondary education for all, we are going to concern ourselves particularly with providing the necessary conditions for the harmonious development of the pupils: construction of school buildings with "methodological offices", rooms for sport, canteens, boarding accommodation and establishments for out-of-school activities.

In Tadjikistan, those who work in education desire fervently, in common with the parents of the pupils and the members of social organisations, to devote their strength and their knowledge to improving the general education school and to the harmonious development of the personalities of their country's young citizens.

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Working Paper on

THE ROLE OF THE JUVENILE PRESS IN DEVELOPING IN YOUNG PEOPLE AN INTEREST IN WORK AND IN TECHNOLOGY

by

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"The Young Technician" (Moscow)

In the USSR there are some 219 papers, both dailies and periodicals, which are published expressly for children and adolescents. Many of these papers have accumlated considerable experience in publishing articles on subjects such as how to prepare children for the world of work and give them vocational orientation.

This is quite a normal state of affairs. Each year the work undertaken by teachers, by schools and other institutions within the school system and by social bodies to encourage and perfect technical creativity among school pupils is becoming increasingly varied and wider in scope. Care is taken to create those conditions which will ensure that the pupils take part in activities which will help to develop their perceptive powers, their skills and abilities, their aptitutdes and technical knowledge. This action has a double objective: it also informs the children about the different branches of science, about technology and about the distinctive characteristics of various occupations.

It should be noted too that the very latest scientific discoveries and technical innovations are always taken into account.

The out-of-school activities of the pupils are also becoming increasingly technical. There are today more than 220,000 technical groups or clubs for children, with a total membership of more than 4,000,000 youngsters. These technical clubs or groups constitute a vast pool from which future skilled workers, engineers and research workers will be drawn, thus ensuring the economy a constant supply of technical manpower.

The network of these technical clubs for children is growing year by year, while new activities which will stimulate their interest in technical creativity are developing constantly. The children's out-of-school activities are in fact being observed with keen interest today by an increasingly large number of specialists, research workers, engineers, technicians and avant garde production workers. The Association of Inventors and Rationalisers (VOIR) and various scientific and technical associations (NTO) are systematically following up the children's activities.

Scientific research institutes, construction works and large production undertakings also take part in organising technical creativity projects for children. This shows the increasing concern of undertakings that training of production workers should not be given solely through vocational education but should start even earlier while the children are still at common basic school. That is when a love of and respect for work can be instilled in the pupils and it is possible to interest them in the trades and other occupations which the undertakings require.

A tractor factory at Čeljabinsk, for instance, has had a "young technicians" club for a number of years. Under the supervision of the factory engineers the young members make tractor assembly parts which will be used later in production. They prepare mockups of machines according to the very latest models, and in doing so they use radio technology and cybernetics. It is not to be wondered at therefore that most of the young people who have belonged to such a club eventually become skilled workers and go into technical schools (tehnikum) or into colleges of mechanical engineering.

An increasingly large number of schoolchildren go in for competitions in physics and mathematics or in chemistry, or else enter for technical creativity exhibitions and competitions.

All the above shows why the press pays so much attention to vocational orientation and guidance and to developing in young people a creative attitude to work and a respect for the public good. Among the main preoccupations of the press, and above all of the juvenile press, is its concern for the school-age child and the problems connected with helping the child to become an adult who is useful to society whatever the position to which he or she may be called.

In view of the means at its disposal and its impact on the development of personality of young people, it would be hard to underestimate the educative role of the press.

The press is the most far-reaching source of direct information available equally to the inhabitants of the capital cities and to those who live in the more remote regions of the country.

Through the press it is possible to spread information about new methods and techniques as well as methods which may not be particularly new but which experience has shown to be the most effective in preparing young people for work.

It is the press, too, which can organise competitions etc. which reveal the interests of children, the extent of their initiative and their inventiveness.

Popular science magazines have proved to be particularly interesting to children. The information they get from them directs their perceptive powers towards attractive fields and shows them new horizons in science and technology.

From the pedagogical point of view this characteristic of the popular science press is extremely useful. When young people learn from reading these magazines about some new phenomena or inventions they are emotionally stirred; the joint impact of discovery and emotion has a strong influence on the pupils and directs their energies towards creative activities. Most children have a thirst for knowledge. Before they choose their future occupation they want to find out as much as possible. The magazines of the popular science press can therefore be considered a permanent incitement to adventure and discovery. In publishing articles about new achievements in physics and chemistry, in mechanical engineering and metallurgy (or in talking about the coming-into-being of new branches of science or technology) we are in fact asking our young readers to make plans for the future. Similarly, in describing occupations and the tools and equipment used in practising them, we help the youngsters to observe the characteristics of the occupations and machines in order to help them discover what interests them.

The press has also a big role to play in organising various activities for young people.

"Pionerskaja Pravda" ("The Truth about the Pioneers"), with a circulation of more than 10,000,000, is the top journal among Soviet children. To a certain extent this magazine is the organiser of various kinds of activity for the young pioneers and schoolchildren. It has a special section for young people in rural areas with a view to awakening in them a love of agricultural work. One method the paper uses is to organise competitions for mental alertness which do much to stimulate the youngsters' interest in scientific and technical developments. One big advantage is that the youngsters who participate in the competitions have to review all that they learnt at school, to analyse it thoroughly and to pursue their interest further afield looking up new sources of documentation and finding information not given in the school-books.

The publishers of "Leninskie iskry" ("The Light of Lenin") has set up a "club for masters of their art" (Klub masterov) in Leningrad which systematically publishes information on vocational guidance. Among the members of this club are worker-innovators

- lathe operators, fitters, milling machine operators, etc. - who are popular idols among Soviet workers. All the information and texts prepared for publication in "Leninskie iskry" are first discussed by the members of the club. The club also arranges meetings with crack or avant garde workers for pupils in their final year of common basic school, and talks about opportunities for obtaining initial training as well as further training for a given trade or other occupation.

Another journal, "Koster" ("Brazier"), published in Leningrad, runs an item called "Advice from a friend" which, in letterary articles, interviews and reportages tells its young readers all about different occupations. One reportage, for instance, was devoted to a famous lathe operator, a hero of socialist labour, and a member of the Supreme Soviet of the USSR. Other reportages have told the children about the various occupations connected with the flight crews of an airplane. An interview published in the journal with the director of a kolkhoz taught them how difficult his task is and explained to them just exactly what work in a kolkhoz means.

Boys and girls who want to become pilots, but do not know how to go about it, can write letters to the column "Advice from a friend" which will answer them. A Leningrad woman pilot, a heroine of World War II who accomplished more than 400 combat missions, is one of the people who answer their questions.

The journal "Pioner" encourages its young readers to a two-way conversation. Through its column "How is this or that done" it enters into direct contact with the children and arranges for them to visit different undertakings (e.g. the main Moscow post office, the film production company "Mosfilm")[1] during which the children can see how everything works.

Under another heading - "Science telegram" - are to be found brief items of information on all kinds of innovations in various fields of science: things that have just been achieved in chemistry, physics, biology etc. This same journal also publishes longer articles with a view to adding to the knowledge of its readers. In these articles the periodical explains, in language suitable to its young readers, technical problems to which solutions are currently being sought, e.g. the construction of supersonic planes, and mammoth planes for passenger traffic. These are all questions which are particularly interesting for young people. The editorial board of the journal gets into touch with the engineer responsible for the trials of the plane and with the chief pilot and asks them a hundred or more questions. The interview is recorded and then reproduced in the journal. The life and activities of the cosmonauts are other subjects of great interest to the children. Many children see in them an ideal to be followed. The journal publishes biographies on the cosmonauts and describes their achievements.

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[1] Cf. Nos. 3 and 6, 1969.

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Yet another column is directed towards the girls. In contains drawings of dress models which give them useful information about the cut and sewing of clothes. The drawings are done with good taste and they help to develop an aesthetic sense in the children.

Another journal - "Junyj naturalist" (The Young Naturalist) - publishes articles about what school children who are nature lovers have been able to achieve, for instance in creating green belts or zones in the towns. Right in the centre of Ivanovo, for instance, the schoolchildren have made a garden and planted it with plants grown from seeds which have come from different parts of the world. The children work in the garden and have formed a club of "young selectors". Ivanovo is a small town to the northeast of Moscow but in the garden there are grapes and lemons and cucumbers which have come from Africa and also various plants from southern Europe.

At Petrozavorsk a young naturalists club is growing birch trees from Carelia, assisted and encouraged by the Leningrad Forestry Academy. They receive tens of thousands of letters from all parts of the country asking them for seeds.

In the area around Voronež (a town near the Don) competitions have been organised among young people to create green belts (e.g. through planting trees) over the ravines and gullies whichh spoil the countryside in that area.

Stavropol' in the north of the Caucasus is in the steppe country. This is where, 13 years ago, a movement of young people to do socially useful work originated, a movement which has since extended to all the schools in the country. The pupils work together in agricultural production brigades or or teams. Many newspapers have published articles on the work done by these brigades. Reporters of the journal "The Young Naturalist" recently visited the locality where the first agricultural production brigade was constituted. They were then able to tell their young readers that not only the leader of the brigade but also some of its members have since become agronomists while others are now working as tractor drivers on their home-base kolkhoz. Today in the Stavropol' region some 2,100 hectares of land, 6 tractors and 6 combines have been put at the disposal of the pupils' agricultural production brigades. The brigades have also now organised a camp site on the steppe near a lake that is well-stocked with fish. The young people do their work well and bring in a good harvest. The time has long since passed when they only occasionnally, when it was possible, learnt to drive a tractor or a combine. Today Every pupil in the rural schools must pass a test on agricultural machines. When he gets his secondary school leaving certificate from the examining board, he also gets another certificate giving him the right to work as an agricultural mechanic.

The pupils in the various brigades work in the fields or in the forest areas. They get together during gatherings organised at national level. The latter are reported in "The Young Naturalist". The youngsters enthusiastically express their love of their country, its beautiful countryside and its immense natural resources. But the magazine warns its young readers that "immense" does not mean "unlimited", and urges them to respect nature's gifts, to love them and to help them to multiply.

There are several specialised sections in "The Young Naturalist": "Forestry news", "School for young trappers", "Questioners' corner". The articles published in these sections are intended not merely to tell the pupils about scientific discoveries, great voyages, skillful hunters and agronomists, but also to encourage them to be active in these fields themselves. In each of them, for instance, the young readers will find suggestions for undertaking such or such a task. In "Forestry news" it was suggested that the pupils observe the life of birds, write up their observations and send their texts in to the magazine. Each month the magazine receives letters from the pupils telling about the jobs they have been given to do and how they have done them. The magazine also gives advice to its young readers.

The section "Questioners' corner" has published articles on competitions in biology which have been organised for the schoolchildren by the University of Moscow.

The tasks they undertake at the suggestion of the magazine have a far-reaching educational impact since through them they become accustomed to devoting their energies to doing useful work. It is through the letters it receives from the children that the magazine can assess whether their articles are having the desired results. Moreover the correspondence creates direct links between the editors and the readers.

One of the very first technical and scientific journals for young people in the USSR is still in existence: "Tehnika Molodeze" ("Technology and Youth").

For several years now the number of competitions organised for young workers, and the number of exhibitions of work done by persons who are highly skilled in their trade have been on the increase. "Tehnika Molodezi" makes a point of following all these competitions closely. It awards prizes for "alertness in the work situation", "the best-finished job", or "an intellectual approach to work" and publishes reportages onall these different activities. It endeavours to promote technical creativity and organises mechanical engineering exhibitions of independent work done by young people. The technical creativity of young people is the prime theme of nearly all the articles in the periodical. The theme is dealt with in such a way that it shows up the usefulness of technical creativity to society as a whole. The greatest possible importance is given to technical innovations which make work lighter and which increase productivity. The magazine tries to reach as large an audience as possible for its competitions and also forthe technical exhibitions organised for young people.

Through publishing liberally-illustrated scientific texts, the journal paves the way for its readers to take part in this technical world of today, to learn about current and foreseeable future developments. It has two feature columns: "On choosing your occupation" and "The Young Communist Movement and technical change".

The magazine has research workers, engineers, workers and journalists all writing for its young readers. The technical drawings which it publishes are so good that the youngsters easily understand the construction principles underlying the equipment being described. It gives factual reports on the successes of young people at their work and in their studies and it thus encourages the pupils to assess their own abilities and their future prospects.

"Technology and Youth" is also concerned with pupils in rural areas. Members of the different academies and research workers are called upon to write for young people under the heading "how to succeed in agricultural mechanisation", and discuss in the column the career opportunities in agricultural mechanisation occupations.

Detailed drawings illustrating the basic principles of the very latest types of machine make the magazine a most useful aid for the spread of scientific knowledge.

Another magazine,"Junyj tehnik" ("The Young Technician") only started to be published 14 years ago. It is therefore a much more recent publication then "Technology and Youth" but is very similar to it. It is a popular science journal especially designed for children.

Like "Technology and Youth", "The Young Technician" publishes articles on trends and developments in scientific and technical fields and publishes essays and reportages on scientists and research workers (both Soviet and foreign) and on engineers and workers. The magazine organises plant visits for the children and pays much more attention than does "Technology and Youth" to telling the pupils exactly how the people it writes about became the eminent scientists etc. of the day. It may just as easily carry the same kind of article or reportage on young chemists and mathematicians who want to specialise in mechanical engineering.

"The Young Technician" has organised a whole network of clubs intended to help young people prepare for entry into institutions of higher education. Its main objective is to help the pupils in their final year of school to supplement their knowledge of physics and mathematics, both of which are essentials of modern technology; but these clubs also inform the pupils, in terms within their intellectual grasp, of new developments in physics, describe the work methods of the Institute of Physics and Technology at Moscow, and point out the importance of experimental physics.

For the past few years a patent office (patentnoe bjuro) has been publishing articles in "The Young Technician". This office has a board compsed of experts in various technical specialisations. Readers of "The Young Technician" can send in a description of their inventions to the journal. The board of experts examines all the descriptions received, judges them and awards certificates to the best among them. The board then writes about them in the journal.

It is also possible for the readers of "The Young Technician" to take a correspondence course offered by a school of radio electronics which puslishes in the magazine. Simple technical drawings, and also drawings that are not so elementary, are published in the journal and the pupils are expected to do different assembly jobs from them. They learn how to read diagrams, to select their parts, to use welding apparatus and measuring and control instruments, and to consult reference books.

Working from these drawings and descriptions of models published in the magazine the pupils learn to do jobs which develop their abilities and practical skills.

Every two weeks "The Young Technician" brings out a supplement called "Skillful hands". The supplements publish drawings and very detailed descriptions telling how to make different articles at home (samodelka). The articles they make may just as well be simple mechanical yous for children as more complex electronic gadgets.

Another journal that does much for children who are interested in technical creativity, who want to learn how to handle tools, to construct models and to participate in competitions in these fields of activity, is "Modelist-konstruktor" ("The Model Constructor"). It publishes detailed drawings for models of boats, trains, etc. and also for scale models of automobiles and pedaloes. These young technical enthusiasts find out in the journal about current national exhibitions, meetings and competitions in engineering and other technical fields. A major item of the journal is concerned with giving references and information as well as advice to young, budding model builders. It is very popular with the schoolchildren.

Conclusions

The best way of developing in children an aptitude for technical creativity is to make use of the assistance given to schools and extra-curricular institutions (such as technical clubs for children) provided by the Association of Inventors and Rationalisers and by various scientific and technical organisations, by research workers, engineers and crack workers in production. As a rule pupils who take part in creative technical work subsequently become active members of scientific and technical student associations and play a part in rationalising production.

By paying attention to the problems inherent in preparing young people for work, in helping them to choose their future occupationa, and in developing in them the qualities demanded of a worker or specialist in the world today, the juvenile press makes a major contribution to technical and scientific development and to the expansion of the national economy.

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Working Paper on

VOCATIONAL TRAINING IN THE USSR

by

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By "vocational training", we mean the system whereby qualified persons are produced for employment in industry, agriculture, or the services. Such persons are trained by the relevant bodies in the Republics, responsible to the State Committee on Vocational Training of the Council of Ministers of the USSR.

Our experience of the training of skilled workers derives from economic and educational reconstruction in the Soviet Union.

Since the Soviet régime took over (and almost twenty years were spent in civil war, the Second World War, and reconstruction of a ruined economy) our industrial output has multiplied eighty-four times. Soviet industry is now able to solve any scientific or technical problem, no matter how complex, whether on earth or in space. Poverty and unemployment have been conquered. The real incomes of workers in industry and the building trade were in 1969 7.6 times what they were in 1913, while peasants' incomes had increased by a factor of 11.

In pre-revolutionary Russia, four-fifths of the peasantry were completely illiterate. The national districts in the east were specially backward, illiteracy rates there were between 97 and 99 per cent. Today it can be said that literacy is universal. No less than 56 per cent of all persons in employment have a higher or a secondary education, among the workers, the figure is 50 per cent, and among the peasants, 33. Standards of education are now uniform throughout the length and breadth of the country. Everywhere, a great deal of energy is being devoted to the task of raising educational levels and of training skilled persons for trades and occupations of every kind.

Very great importance is attached to vocational training, that is to say, the training of skilled workers. The State is constantly concerned to ensure that in education and training, those who join the ranks of the working class are worthy to do so, and that the new recruits - highly educated, technically well trained - are mindful of the heavy demands made on them by Communist morality.

Vocational training is of course intimately bound up with general education and technical training, it has, nevertheless, certain distinguishing features. A vocational training programme for any occupation has to probe into the scientific and technical laws governing the organisation of production, and to investigate the physical and chemical parameters involved in the processes of production. From such an analysis, general education and technical training stand to gain.

Thus it is that vocational training is an important integral part of the Soviet educational apparatus.

There are at present two basic kinds of educational establishment in the Soviet Union which turn out skilled workers, as well as trained staff for commerce and services - the vocational schools and the technical colleges.

The vocational schools are designed for young people who have got as far as Form VIII in the general school system. They offer courses varying in length from one year to three or four. Those taking the three to four-year courses, besides receiving a technical training for an occupation, get a full secondary education, entitling them to enter a Higher Educational Establishment (VUZ). In establishments offering courses shorter than this, the general education given is limited to what is essential for the occupation in question. The youngsters studying in such establishments can at the same time get their secondary education by study at a night school.

To enter a technical college, on the other hand, a young person needs to have had a full secondary education. Persons trained in such establishments have higher qualifications than those turned out by the vocational schools. The course lasts from one to two years.

It should be noted that throughout the national educational system, training is free. Indeed, the overwhelming majority of persons studying in secondary specialised educational establishments or establishments of higher learning enjoy free accommodation and an allowance. All expenses are paid by the State.

Most of the young people studying in the vocational training establishments are between fifteen and eighteen years of age. But everybody has a chance to improve his skills. To this end there exists an extensive network of night schools and correspondence colleges. There are, in addition, various ways by which the worker can improve his education or technical skills without attending a school.

Anybody studying at night school or in a correspondence college (secondary general, specialised or higher) enjoys extra paid leave for the time he requires to do laboratory work, sit for examinations, or prepare and defend a thesis. Those attending extra-mural studies are paid half the cost of the travel cost for the purpose of laboratory work, the submission of results or the taking of examinations. And there are other privileges too.

All employed persons are now on a five-day week, with two days of rest. Such an arrangement is highly conducive to study. It is no accident that today more than one third of the population is involved in an educational project in some form or another.

How did the Soviet vocational training system evolve?

Generally speaking, it is true to say that up to the Great October Socialist Revolution the only kind of vocational training was provided by low-level trade schools. There was overt exploitation of the adolescents being trained in them. The youngsters in question worked eleven or twelve hours a day for almost nothing. There were no instructional programmes in any shape or form. The teachers were barely literate, the equipment wretchedly inadequate.

Within a few days of taking over, the Soviet Government began to do all in its power to offer the masses free access to the highest levels of professional competence.

In pre-revolutionary Russia, many kinds of school existed; in their stead, the Government introduced a single "labour school" with a course lasting nine years. The national educational system was arranged in the form of a series of connected links. Schools of all kinds were made accessible to all and free of charge, and the problem of universal compulsory elementary education was tackled. Technical training and training for work were introduced into school curricula. Work designed to eliminate illiteracy went forward on an immense scale.

One of the first decrees to be signed by V. I. Lenin, founder of the Soviet State, laid down (1919) that a prerequisite for the triumph of the workers' and peasants' revolution was an increase in labour productivity, the quickest and surest way of bringing this about was to disseminate occupational and technical skills among the masses.

A year later (1920) Lenin signed a decree on compulsory vocational training. The level of technical proficiency among the masses was appallingly low, and industry desperately needed skilled workers. Hence vocational training was made compulsory for all workers between the ages of eighteen and forty.

Especial importance was attached to the vocational training of young people. In 1918, it was decreed that such training was to be compulsory for youths between fifteen and seventeen years of age, working in undertakings and organisations of various kinds.

To begin with, these youngsters attended special institutions, six times a week, for two hours at a time, for a period of two years. Further investigation, however, led to the creation of what were called "factory schools" (FZU).

These combined instruction with productive work, and general education with vocational training. The moral, physical and aesthetic education of the youngsters entrusted to their care was not neglected. As a result, these institutions were able to turn out educated, technically competent young workers.

Even at this early stage, heavy demands were being made on vocational training establishments. It was said that the training given should not be reminiscent of old-fashioned apprenticeship schemes; that it must be both broad and thorough, that links with general knowledge and technical know-how must be preserved; that instruction must go hand-in-hand with productive employment, and that the vocational training system must play its part in the general struggle to build an entirely new society. It was not enough merely to train a man to do this or that specialised job; he had to be given a creative attitude towards production, an eagerness to increase output and productivity. He had to be the sort of man who is anxious to improve his own education and technical knowledge and is prepared to throw himself wholeheartedly into the battle for technical progress.

The main branches of heavy industry (metal works, machine tool factories, tractor works, motor vehicle plants, agricultural machinery factories, power stations, chemical plants and aeroplane factories) were called into existence by the first Five-Year Plan (1929-1932). Hence the desperate need for more and better trained workers.

In 1932, the Government ruled that all workers minding complicated machinery or doing other responsible work should be required to show evidence of certain minimum technical attainments. They were required to know something about safety procedures, the use of materials, the characteristics of equipment and instruments. They had to be familiar with production processes at their place of work, and to have some idea of labour organisation.

The workers in more and more occupations were expected to reach this minimum standard. By 1936, all workers, both male and female, were required to have reached it.

Soviet industry continued to expand at a prodigious rate. By 1940 almost twelve times as much was being produced as in 1913. In all branches of industry, workers were streaming in. They had first of all to reach the minimum standard referred to above, and to take a course at a "factory school". Between 1936 and 1939 alone, some fifteen million persons were given mass technical training in industry.

But vocational training had to be yet further expanded and improved to cope with constant technical innovation, mechanisation and automation in undertakings, in transport systems, on building sites, in agriculture, a process given further momentum by the dizzy pace of economic expansion. The need began to be felt for a planned, nation-wide vocational training system. Hence a specialised organisation, called the "State Reserves System" was set up in 1940, for a planned increase in skilled young workers for industry.

The system was endowed with central organs, having their seat in Moscow. Many existing schools and colleges in all the Republics and districts were made over to the system. They provided a basis for the creation of trade schools, railway-training colleges, and "factory schools".

This training system (in conjunction with the system whereby workers were expected to reach a minimum standard in technical matters) played a great part throughout the Great Patriotic War of 1941 to 1945, when massive reinforcements had to be quickly produced to plug the gaps left by those called up for service at the front.

The system was later developed and improved, until today it constitutes an independent vocational training system.

The State Committee on Vocational Training of the Council of Ministers of the USSR manages it through appropriate committees in the Union Republics, these latter committees being at the same time responsible to the governments of the Republics concerned.

The State Committee draws up lists of trades and occupations for which courses must be provided by the vocational training institutions. It draws up curricula and programmes, rules and regulations, and plans for the output of the system. It also makes plans for further development. In accordance with decisions taken by the Government, it issues instructions and makes proposals to the Government for further improvement and development. It ensures that State plans are in fact put into effect and sees that decisions and orders are adhered to.

To assist the vocational training establishments in improving their output, the State Committee organises research work. It publishes handbooks for teachers and instructors, textbooks, films and slides, etc., and issues audio-visual aids, besides keeping a close eye on the teaching methods used. Finally, it takes action to improve the qualifications possessed by the vocational training lecturers and instructors themselves.

The State Committee, as the national central body responsible for vocational training, can take all other action it may see fit to ensure the training of qualified workers, by industry as well as by the vocational training establishments. To this end, the Committee has a number of departments and branches: a Central Methods Office, and All-Union Institute for Scientific Research, an All-Union Institute for the Advanced Training of Instructors (with branches in every Republic), an All-Union Trust of Production Undertakings (running nine factories and one film concern). Under its immediate authority come sixty polytechnics, producing instructors and lecturers for the vocational schools.

The State Committee has its own Special Council (350 members), embracing academicians, holders of doctors' degrees in economics, education or technical subjects, and other specialists active in vocational training work. The Council examines drafts of instructors' handbooks, programmes and curricula, textbooks, films and slides, and offers its recommendations in connection therewith. Material and equipment can be released for use only if first approved by the Council and if the Council's decision has been ratified by the State Committee.

All branches and departments of the State Committee - the Central Methods Office, the All-Union Institute for Scientific Research, the Trust, and so on - co-ordinate their activities with those of other ministries and departments with industrial interests. They are in constant touch with institutes doing research in industrial or pedagogical subjects, with bodies specialising in teaching methods, and with the staff of the vocational training establishments themselves. In this fashion, they can more readily meet the needs of ministries and departments and are well placed to promote the more effective training of skilled workers.

The national vocational training system has played a very considerable part in producing the skilled, well-educated workers needed by the national economy in all its branches. Since it ws created in 1940, it has grown to vast proportions. It at present embraces 5,200 vocational schools and technical colleges, training, all in all, 2,250,000 students. The vocational schools offer training in some 1,100 different trades or occupations, the technical colleges in some 500. Skilled workers are produced in accordance with State-made plans, in which allowance is made for industrial demand and for the supply of young people coming forward. The persons training in these institutions are becoming steadily more numerous. Their numbers will multiply by a factor of 1.8 during the current five-year period (1966-1970). The vocational training schools will in 1970 admit 1,800,000 new trainees, while turning out 1,600,000 skilled workers.

Besides classrooms for theoretical work, each establishment has its laboratories, workshops, machinery, lathes and other equipment for practical exercises. In the country, they possess scores of tractors, combined harvesters and other machines; they have their own land, too, on which trainees can sow and reap.

Each vocational school is attached to some (one or more) undertaking, collective farm, building site, transport undertaking, etc., in the neighbourhood.

Towards the end of their training, the pupils have production practice - as a rule in the undertakings and on the sites where they will work on finishing the course. In this fashion, each can be sure of employment. Any work done in the course of production practice is duly paid for.

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The vocational schools provide practice on the factory floor and instruction in the machinery, implements and techniques the worker will use in his chosen occupation. But they provide, in addition, instruction in the general technique of production, technical mechanics, electrotechnics and rudimentary industrial electronics, simple organisational and economic theory, and in a variety of other more general subjects (depending on the choice of occupation). They also give instruction in the elements of sociology, physical culture and aesthetic appreciation are taught as well.

Education and training are not confined to the classroom. There are all sorts of clubs - for people anxious to make things for themselves, for amateur artists, sportsmen and others. Virtually every trainee has some out-of-school activity as well.

There are final examinations, and successful candidates receive a diploma. Each is guaranteed employment in accordance with the occupation he has chosen and the skills he has acquired. Youngsters who leave a vocational training school and have had a secondary education are eligible for admission to a Higher Educational Establishment (VUZ). Besides which, those who have been outstandingly successful in their examinations are entitled, without having to sit for any competitive examination, to take evening classes or correspondence courses organised by VUZs, in accordance with the marks awarded them for various subjects in their examinations.

Besides the ordinary vocational schools, there are vocational schools devoted entirely to evening classes. They train workers without the latter having to take time off from production, provide advanced training for those already skilled in an occupation, and provide them with a second or alternative occupation should they so desire.

The vocational training system has been developed to a point at which the ranks of the working class can now be topped up with skilled younger workers according to plan. In the last thirty years alone, the State system has turned out 23,400,000 skilled workers, now active in all branches of the national economy.

At the same time, many millions of workers were trained in an occupation or enabled to improve their skills without having to take time off from factory or workshop.

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Soviet vocational training establishments have accumulated a vast amount of experience. Training for work is essentially based on a system whereby the trainees play an active part in production, while the work they do is strictly subordinate to its value as training. Training in the establishment's own workshops or fields has to proceed hand-in-hand with practice on the production line or factory floor, the trainees playing the part of real workers.

Much, too, has been achieved in the organisation of theoretical training. The theories of modern teaching science and psychology, about the need to stimulate the trainee to conscious reflection and activity, are put into practice, while use is made of conclusions reached in the laboratory. Much experimental work has been done, too, on the introduction of programmed instruction into the process of training. And vocational training is carried on side-by-side with various kinds of out-of-school activities designed to secure the all-round development (physical, moral and aesthetic) of the young trainee.

True as always to its international obligations, the Soviet Union is generous in sharing the fruits of the experience it has acquired with other socially progressive countries struggling for their economic independence. It gives them practical assistance in organising their vocational training systems. In such countries, the Soviet Union has given help in the setting-up of well-equipped vocational training centres - a factor of great significance.

In the last ten years, more than sixty-five centres designed to train instructors have been thus created, with Soviet aid, in the United Arab Republic, Iraq, Iran, Mali, Cuba, Algeria and elsewhere. They are equipped with Soviet apparatus and Soviet teaching aids, and Soviet lecturers and instructors are active in them. Some 43,000 skilled workers have already been turned out; another 24,000 persons are at present under instruction.

These centres are training skilled personnel for industry and agriculture, transport and communications. Their ex-pupils are now working with success in undertakings (existing or under construction), helping to lay the foundations for the national economy.

Calls for assistance in setting up vocational training centres are becoming ever more numerous. This is why the Soviet Union continues to help in the organisation of further centres in various countries of Asia and Africa.

There are many, many foreign nationals now under training in Soviet vocational schools - 4,000 to 6,000 a year, from all sorts of countries.

Allow me, in conclusion, to dwell on a few problems connected with the further development of vocational training in the Soviet Union.

The programme of the Communist Party of the Soviet Union provides that in 1970 there shall be full secondary education for all our young people. The very latest techniques are being systematically introduced into our national economy, while automation and mechanisation are continually gaining ground. Hence the need for better qualified workers. Our vocational training system is helping to solve this very important problem.

With production conditions being what they are, we have to produce highly-skilled workers who, besides being masters of their trades, have a good grounding in industrial economics and organisation. They must be able to organise their own work on scientific lines. These skills, these abilities, all have to be provided by our vocational schools and technical colleges.

Hence we are doing our best to improve the instruction given, and are arranging for vocational training courses to last as long as three to four years. In this fashion, these schools will be able to provide a full secondary education, besides the practical knowledge and technical skills required for a given occupation.

In April, 1969, an order was issued by the Central Committee of the Communist Party and the Council of Ministers of the USSR on further action to improve the training given by the national vocational training system. Party and Government together indicated the lines on which this major task is to be tackled. The order recognised the need to turn the vocational training establishments into vocational schools offering courses of three to four years; trainees would be drawn from among young people who had completed a full eight years of general schooling, and vocational training would go hand in hand with secondary education. These instructions are being successfully put into effect. The country already has some four hundred vocational schools, which provide a full secondary education over and above purely occupational skills. In the 1971-1975 five-year plan, provision is made for further progress in the same direction.

Arrangements are also being made to ensure that all trainees leaving the existing establishments will be able to go to night school, thus acquiring a full secondary education as well as occupational qualifications.

At present, our vocational training establishments only accept youngsters between fifteen and eighteen years of age. In future, though, to meet the desires expressed, and also to meet the demand from undertakings, we envisage accepting older people, that is, persons between eighteen and twenty-two years of age. We want to make sure that any body may receive the requisite vocational training in his chosen trade or occupation before joining the production line.

If the above problems are to be solved, we shall need considerably more vocational schools and accommodation, properly apportioned throughout the country. The Government is providing the requisite resources. The vocational training authorities, ministries and departments now have to make good use of the sums involved to construct the necessary premises as early as possible, so that the skilled workers required by the swiftly-growing national economy may be produced in adequate numbers.

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Working Paper on

THE OFFICIAL VOCATIONAL TRAINING SYSTEM IN THE TADYIK SOVIET SOCIALIST REPUBLIC

by

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THE OFFICIAL VOCATIONAL TRAINING SYSTEM IN THE TADYIK SOVIET SOCIALIST REPUBLIC

In the past, Tadyikistan was backward in every sense of the word. Before the Soviet epoch, not more than 400 people or so were employed as factory workers. Under the Soviet regime, a socialist society has been constructed. The Tadyik workers, with varied support from the other peoples of the USSR, have been highly successful in reconstructing the national economy on socialist lines. The Republic now possesses a highly developed industry, a highly mechanised agriculture, ample power, a metallurgical industry, a machine-tool industry, etc.

With the development of the national economy there has been a speedy growth in the labour force. More than 450,000 wage and salary earners are today employed.

The official vocational training system is designed to fill the ranks of the working class with qualified workers.

How did this system evolve, and what has helped to increase the importance of the part it plays in the vocational training of young people?

The first "factory school" (FZU) was opened in Tadyikistan in 1924. It trained skilled workers for the oil and power industries. With the emergence of other industries, the training of skilled workers developed further, and FZUs multiplied. They were an integral part of undertakings, and the production plans of the latter made allowance for the work done in training shops. It was from the FZU that the undertaking concerned drew the bulk of its skilled labour.

In the Tadyik Republic, as throughout the country, new factories and mines sprang up like mushrooms; roads were built and railways laid. In agriculture, the peasant yielded pride of place to collective labour. Industrial development, proceeding at a rapid pace, called for a constant influx of well-trained workers in huge numbers. Hence the need for an overhaul of the vocational training system.

In our Republic, as in the others, it became essential to undertake the planned organisation of the vocational training system, taking into consideration the interests of the State, the growing demand for labour, and the likelihood of further economic growth.[1] Everywhere trade and railway-training schools, together with "factory schools" (FZUs), were emerging. Specialists in large numbers were assigned to instructional duties, to ensure the success of the training schools and institutions; these people were channelled into the "Labour Reserves" system. They all had long years of experience behind them and were anxious to put their knowledge and skill in the training of the younger generation.

In the trade and railway-training schools a two-year course was introduced. In the FZUs, a six-month course was given. The system of instruction was based on the principle that practical and theoretical training should go hand-in-hand with socially useful productive work.

The number of hours devoted to laboratory work and training in production was significantly increased. The aim of the theoretical and practical instruction given in the schools was to provide trainees with technical and occupational knowledge and some idea of how the process of production works, to teach them how to interpret drawings and plans, and to know how to set about the solution of a technical problem. Trainees were in addition acquainted with the technical literature concerning their chosen occupation. Standardised curricula and programmes were devised so that trainees might acquire the qualifications of skilled workers.

To manage the whole system, a specialised central body was set up: the Central Labour Reserves Administration. This had local branches in the republics, regions and districts.

Before the war, the general contingent of trainees in Tadyikistan numbered more than 2,000 persons. In the trade schools, fitters, locksmiths, blacksmiths, moulders, electricians, locomotive repair specialists and assistant engine-drivers were trained. These people received their theoretical instruction in the classroom, the practical instruction being given on the factory floor or in the undertaking.

The war caused vast changes in the number and location of schools and colleges, in their intake, in the resources earmarked for their upkeep, among the ranks of the instructors, and in the training process itself. The vocational training system was expected to work at an accelerated pace. The trade schools had to turn out a skilled worker in one year instead of two; the FZUs cut down their courses from six months to four or five (depending of course on the complexity of the occupation). Programmes and teaching methods were subjected to a thorough overhaul.

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[1] On this point, kindly consult T. Shevchenko: "Vocational Training in the USSR".

Most of the trainees' time was devoted to production training, which was directed toward the fulfilment of norms laid down by the State. During the war, members of the Tadyik Labour Reserves, working in undertakings, produced goods to a value of more than 5 million roubles. The pupils of one railway-training school in Dushambe alone refitted 1,299 railway wagons. Whole groups of pupils took over benches and lathes, produced coal, ore and oil, and built factory buildings and workers' accommodation. The output of the vocational training system grew from year to year. During the war years, more than 5,000 young workers were trained and assigned to work in the interests of the Republic.

Reconstruction after the war, and the further development of the national economy, called for more and more workers for the highly skilled occupations. The quality of the training given and the output of skilled workers had to be improved.

The Government at once stepped in to help. Within a very short time more than 2,000 buildings, and more than 20,000 machine tools, were assigned to the "Labour Reserves" system throughout the country (including Tadyikistan), while more of the best workers were assigned to instructional duties. Factory schools and establishments were multiplied considerably.

Persistent efforts were made to improve the quality of the instruction (both theoretical and practical) given. A new list was drawn up, showing the occupations for which skilled labour had to be trained. Curricula and textbooks were once more overhauled, and courses lengthened. Trainees got their production training by undertaking quite complicated production tasks; whence the need for standards defining productive work done in the course of instruction. It had been found that the combination was the best way of accustoming trainees to the demands of highly productive labour.

Technical colleges were created to train youngsters who had completed their secondary education to skilled-worker level.

As regards the training of agricultural workers, one government decision was of great importance. This was a decision to the effect that the training of qualified agricultural machine-operators should proceed in accordance with the system in force in the industrial trade schools. In accordance with this decision, machine-operators' schools were made over to the vocational training authorities; in them teaching had to be reorganised, in such a way as to produce machine-operators whose qualifications would not be too narrow.

The machine-operators' trade schools started to turn out trained repair specialists, fitters, smiths and multipurpose lathe operators for the collective and state farms. The instruction given was based on a study of the working methods used by the most advanced machine-operators.

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Special attention was devoted to the children of those who had fallen during the Great Patriotic War. Most of them were trained as skilled workers in the technical establishments and FZUs of Tadyikistan.

An Act entitled "On the Reinforcement of the Connection between School and Life and on the Further Development of the National Education System" produced great changes in the organisation of education and training (both in and outside the school) of young people and their preparation for employment. This Act set up vocational training establishments for the vocational training of youngsters taking up employment after eight years' schooling.

All the training establishments run by the "Labour Reserves" system of the Republic were reorganised into urban and rural vocational schools. This in itself marked a fresh stage in the development and improvement of the Republic's vocational training system.

The changeover was prepared by a period of accelerating technical development, during which up-to-date branches of industry emerged, while the nature and contents of the work done by the workers changed.

Instruction in the urban and rural vocational training schools presupposed active and systematic participation by the trainees in productive labour, in close contact with undertakings, work sites, state and collective farms.

It was decided that courses in urban and rural vocational training establishments should last for two to four years (depending on the complexities of the occupation chosen), on the assumption that trainees would have had eight years' schooling.

The experience acquired by the "Labour Reserves" training schools had shown that if a school runs too many courses, the quality of the instruction given in any one occupation is likely to suffer. Accordingly, a degree of specialisation was introduced. In the urban and rural vocational schools there was an increased output of skilled workers for the metallurgical, metalworking, electrotechnical, chemical and oil-extraction industries, for transport and communications, for the building trades; more fitters, sanitary technicians and radio specialists were produced.

The training given was thus more efficiently organised, while costs were reduced; establishments were better equipped for the training provided, and teaching staffs were reinforced.

As a result of specialisation, young people trained in urban and rural vocational schools were given a grounding, not only in the specialised subjects of their choice, but also in general engineering and technical problems, such as design, electrotechnics, mechanisation and automation of production, while being familiarised with the most up-to-date techniques and production processes. At the same time, it became possible to train people in more highly specialised occupations.

The practical, productive side of the teaching given was likewise reinforced. In all urban vocational school workshops, laboratories, properly equipped for woodwork, metalwork and so on, were organised.

The rural vocational training schools at that time had some 350 tractors, roughly 100 motor vehicles, more than 150 combine harvesters, cotton-pickers and mechanical shovels. Each rural training school was allotted some 150 acres of arable land on which the practical training given to pupils could be put to socially useful ends.

Practical work in the fields thus represented the first stage in the training of agricultural workers. Pupils learnt how to handle agricultural machines and tractors, how to plan, how to prepare the ground for sowing, how to combat pests, how to use fertilizers, and how to reap the harvest and hand it over to the State.

On this training land trainees grow cotton, wheat, maize, alfalfa, and produce the fodder needed for the animals. They grow vegetables, melons, potatoes and wine, which are handed over to the kitchen and consumed by them.

In the Republic, there are at present 53 vocational schools and technical colleges in which over 17,000 boys and girls are being trained. Eighty-five per cent of them are of native Tadyik stock. In the last four years 38,500 skilled workers have been trained.

Under the leadership of their instructors and of engineers and technical specialists from undertakings, clubs and societies are formed among the trainees. These produce audio-visual aids, scale models, and so on. The articles so produced are on show in an exhibition organised by the State Committee. Many models manufactured by trainees have been highly rated and are on show in the exhibition devoted to products of the national economy in Moscow.

Much attention is given to the general, physical and aesthetic education of the pupils.

They have at their disposal very considerable libraries - some 300,000 volumes of technical and political, as well as belletristic literature. In their free time they go to the cinema or theatre, visit exhibitions or museums, listen to the radio or look at television. Frequent meetings are arranged with scholars, writers, artists, composers and well-known persons.

The State Committee of the Council of Ministers of the Republic manages these establishments. This body is subordinate to the Council of Ministers of the Republic and to the State Committee on Vocational Training of the Council of Ministers of the USSR. Together with the State Planning Committee and the branch ministries of the Republic, our Committee plans the training of skilled labour for the national economy. It makes plans for the increase of vocational schools and for the equipment thereof. The plans evolved by us are referred to the State Committee on Vocational Training and to the State Planning Committee of the USSR for inclusion in the plans produced for the Union as a whole.

The State Committee for Vocational Training of the Republic possesses a corps of inspectors, together with a teaching methods department. These give assistance to the vocational training institutes as regards teaching procedures, and ensure that training programmes are strictly adhered to, both quantitatively and qualitatively. Great importance is attached to unity of the criteria used in supervision and inspection, to checks on the quality of the products produced by trainees and on observance of construction standards, and to inspection of exercise books and written work done by the pupils. Great importance, too, is attached to the giving of advice to vocational training instructors, as regards instructional procedures. The Committees on Methods (there is one in every vocational training establishment) play an important part in this respect.

The teaching methods department supplies the training establishments with curricula and programmes, audio-visual aids and other equipment. Seminars, lectures and training sessions are regularly organised in connection with teaching procedures.

The training schools enjoy the use of school buildings, workshops, laboratories, sports grounds, hostels, etc. - in brief, everything they might conceivably require for their courses and the accommodation of their students. In the last few years, eight new training centres, with accommodation for 600 students and more, have been brought into the system. New buildings are going up in three different areas of the Republic, and in the three areas, existing training establishments are being extended. The Government and branch ministries of the Republic spend a lot of money every year on construction. In 1965, the sum was 1,100,000 roubles; in 1970, 2,356,000.

As a result, it has been possible to train considerably more skilled workers. In 1966, for example, 9,700 persons were accepted for training, of whom 6,400 left as qualified workers; in 1970, 11,500 skilled workers have been produced and more than 13,000 persons accepted for training.

On the teaching staff of our vocational training establishments there are fifteen persons entitled to call themselves "zaslužennye učiteli" (teacher of merit) or "masters of production training". There are 248 "otličniki" (oustanding teachers) of vocational training of the Tadyik SSR. Many hold high official awards and decorations.

The State Committee on Vocational Training is always anxious to improve the teaching skills of the vocational training teachers and instructors.

The Dushambe Vocational Training Polytechnic plays a great part in solving this problem. The duties of this institution are to fill the ranks of the vocational training instructors ("masters of production training") with suitably qualified persons. The brightest pupils from the vocational training establishments, who have done well in their examinations and show some talent for teaching, and who have accumulated a good deal of experience on the production line, are accepted as trainees by the Polytechnic. Workers from industry and agriculture are eligible too.

To improve the qualifications of the technical teaching staff at vocational schools, the system includes an All-Union Advanced Training Institute, with local branches. There are also numerous seminars and courses, organised by the Ministry of Higher and Specialised Secondary Education of the USSR. In the establishments of higher education of the USSR and of the Republic, there are departments offering advanced training for the teachers of both general and specialised subjects.

In the past and still today, productive work is the foundation upon which vocational training firmly rests. All vocational schools have their own undertakings in which the pupils, led by experienced instructors, do productive work and gain experience in so doing, while familiarising themselves with the most up-to-date working techniques. For example, there are two vocational schools, Nos. 28 and 47, working with the Dushambe textile factory, for which they train spinners and weavers. Young construction workers are trained by vocational school No. 30 for the "DuŠanbestroj" trust. The rural vocational school No. 15 produces skilled machine-operators who have trained in, and will ultimately work for, the undertaking known as "Tadjikselhoztehnika". And so on.

The undertakings in question are required by law to offer jobs, equipment, instruments, etc. They acquaint the pupils with the technology of production and the experience acquired by the most advanced workers, and help the trainees to acquire occupational knowledge and skills. Representatives of the undertakings help in the equipment of the schools and in marking the final examinations. They help the ex-trainees to settle into their new jobs and see that they are properly housed. The vocational training establishments are assisted in the maintenance of premises; they are helped in acquiring benches, lathes, machine-tools, and so on and so forth, which they might need for instructional purposes.

Both Party and Government are exceedingly concerned with the vocational training system. In accordance with the special order issued in 1969 by the Central Committee of the Communist Party of the USSR and the Council of Ministers of the USSR, ten vocational training units, in which a full secondary education is provided alongside purely technical training, have already been constructed.

The vocational training establishments of the Republic help in the training of skilled workers for developing countries. Thus, young people from Kenya, Angola, the Yemen, South-West Africa, Portuguese Guinea, have in the last four years studied in one rural and two urban vocational schools. Today, boys and girls from the Democratic Republic of Viet-Nam are studying in Schools Nos. 1 and 5 in Dushambe.

The solemn welcome extended to the young people when they come to take up jobs in an undertaking is of considerable educational significance. On their arrival, the youngsters are greeted by veterans of labour, outstanding workers, and representatives of public organisations. On behalf of the entire staff, the factory representatives congratulate the young folk on having graduated successfully and on joining the glorious family of the working class. The young people receive souvenirs on the occasion.

Graduates of these schools, who have completed their studies with especial distinction, can (provided they can produce a certificate attesting that they have received a secondary education) enter a High Educational Establishment without having to sit for a competitive examination.

Since the Republic's vocational training establishments were created, more than 90,000 skilled workers have joined the glorious working class of Soviet Tadyikistan. Today trained workers are to be found everywhere in industry and agriculture, indeed, in transport, communications and in the building industry every third worker is a graduate of the vocational training system. Many of these youngsters bear high government decorations, or are managers of undertakings, deputies in the organs of Soviet power, or Heroes of Socialist Labour.

In the next five years the system will have many problems to surmount. The network of schools will spread even further afield. More skilled workers will be trained in more and more highly specialised occupations. The teaching staff, engineers and others, will be considerably increased.

In the next five years, we plan to train more than 50,000 skilled workers, which will call for a further extension and improvement in the system.

One of our biggest tasks in the next five years will be to continue the gradual transformation of vocational training establishments into vocational training schools offering a three-to four-year course, during which time young people who have had eight years of general schooling would be given a secondary education and a vocational training. New plans and programmes will be called for. These are now being completed by the All-Union Vocational Training Research Institute, the Central Office on Teaching Methods, the Ministry of Education of the USSR and the Academy of Pedagogical Sciences of the USSR. The new plans, programmes and curricula are being worked out scientifically, and will be such as to guarantee the requisite connections between the study of special, general technical, and general educational subjects.

In performing these very important tasks the vocational training system will be making its contribution to a solution of the problem facing the whole country, i.e., how to introduce universal secondary education for young people, besides doing its bit to improve the vocational training of young workers.

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Working Paper on

ORGANISATION OF VOCATIONAL GUIDANCE WORK IN THE USSR

by

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The guidelines followed in the USSR for vocational guidance activities are determined by the national economy's requirements (considered locally and as a whole) for manpower in different occupations. Needs for workers of all categories and at all levels of qualification are considerable. Scientific and technical progress has modified the characteristics and content of the work activities carried out by modern workers for whom a high level of general education, a broad range of knowledge and skills of a polytechnical nature are particularly important.

In preparing pupils to choose their future occupation it is accordingly necessary to aim primarily at orienting them towards the acquisition of general education at secondary level which will provide them with the foundation required for training for an occupation.

The following are decisive when considering young people's ability to choose their occupation with a full knowledge of what is involved: positive attitudes towards work of social utility; general education at a high level; acquisition of ability to endure work and of knowledge and skill of a polytechnical character; some knowledge of the various occupations, the economy's needs for different types of qualification and of existing training facilities; ability to put forward their plans for their future activity with confidence; interest in a given occupation and the desire to learn it thoroughly.

In the USSR we consider that education must be at the basis of all vocational guidance activity.

Most occupations at worker level do not require any particular psycho-physiological abilities from those wishing to practise them. There is no predetermined correspondence between an individual's innate personal characteristics and a given occupation and there cannot be any. Training, the acquisition of skills and, of course, the individual's attitude to work play the decisive role. It therefore follows that, for most worker occupations, the aim of vocational guidance is much more pedagogical action on pupils to develop their interest in given worker occupations than studying each pupil's personality with a view to selecting occupations for him. But it is naturally necessary to study the pupils' personality when orienting them towards worker occupations, in order to direct their occupational aspirations towards the interests of society and the needs of the national economy with due regard for their specific aptitudes.

The educational action designed to develop qualities in the pupils which will enable them to choose their occupations with maximum prspects of success is completed by vocational counselling action. This action must permit the young person to make his occupational choice on the basis of a scientifically valid recommendation. For this purpose it is necessary both the know his personality as thoroughly as possible and to be informed about occupations, the manpower needs of the national economy and existing vocational training facilities. Vocational counselling involves heavy responsibilities and can only be undertaken by specialists who have been specially trained for it.

Vocational guidance for young people for occupations in which those engaged have to meet particularly high requirements must be accompanied by occupational selection.

The action involved in orienting pupils towards worker occupations and the way in which this guidance is given are determined by the occupational structure of the working class, the changes to be foreseen in this structure in connection with the development of the national economy, the qualifications required of modern workers and the national economy's current and foreseeable needs for manpower, considered as a whole and for the particular locality.

In orienting pupils towards worker occupations the most important part is played by the set of elements included in their training for work (trudovoe obučenie) and their education, i.e.: training for work as a subject of instruction, out-of-school activities in work of technical creation and agricultural experimentation; socially useful work and productive work; and vocational guidance action for a complete group of people (mass action) and for individuals. Each of these elements may play a decisive and significant role in developing qualities in the pupils which enable them to choose their occupation properly. Translation of this possibility into reality depends on a whole series of factors: raising the level of training for work and of education and strengthening their links with active life and production; greater attention to vocational guidance in all activities designed to prepare schoolchildren for active life and work.

In the USSR, the content of vocational guidance for young people has been defined in principle. The following are two typical examples (in one rural and one urban area) of well organised vocational guidance.

Vocational guidance given to the pupils of a general education school in the village of Uzunovo (Moscow region) has proved to be very effective. A sovkhoze and a selection office collaborate with this school. Such undertakings and others in the region have considerable need for qualified staff for agriculture, mainly for agricultural mechanisation. The content of vocational guidance for the school pupils was determined accordingly. During their first years of schooling (from the first to the fourth year), during their lessons in training for work and their excursions the pupils are given an introduction to agricultural plants and stock; they acquire skill in handling very simple tools which they use for cultivating vegetables and flowers. They also familiarise themselves with the work of the undertakings from the beginning of their schooling.

From the fifth to the eighth year of schooling the pupils follow lessons in technical and agricultural work. During these they are taught the techniques of cultivating plants, of stockraising, of agricultural mechanisation and of rural electrification. They are also taught about different occupations, worker occupations in the first place. During the production practice organised in the summer pupils from the fifth to the eighth year of schooling work on the school plots set aside for agricultural education and experimentation and learn to apply advanced techniques and carry out experimental work, as foreseen in the programme. In order to interest girls in service occupations they follow lessons in the work involved. Training for work lessons are given in metal-work and woodwork shops which are properly equipped for the purpose and in special rooms set aside for service occupation work. Practical work in cooking is organised in the school canteen. Practical work in agriculture is organised on the agricultural education and experimentation plot and in glasshouses. Work of social utility necessarily forms part of pupils' programme of training for work. The activities included in this programme include making and repairing didactical material, agricultural material, tools and various devices used in the school workshops; the pupils also cultivate vegetables and fruit for the school kitchen. They learn how work is administered in the sovkhozes and the selection office which collaborate with their school and familiarise themselves with the organisation of work in the fields and farms and with the conditions of work in the various occupations.

Training for work in the ninth and tenth years of schooling is a very important means of strengthening pupils' desire to work in agriculture. During these two school years production training is organised for the following occupations: tractor-driver-mechanic; driver; agricultural chemistry technician. The school has the necessary equipment for study of tractor and motor vehicle operation; practical work is organised in the workshops of the sovkhoze. Courses in agricultural chemistry are given in the "school chemistry cabinet", the corresponding practical work taking place in the selection office laboratory.

For a long time pupils leaving this school have been receiving a certificate in a level of qualification in one of the above occupations, in addition to their certificate of secondary school completion.

Membership of a production brigade involves preparation for work in agriculture, and this is taken into account by the teachers. The brigade belonging to the Uzunovo village school operates all year round. Its members are pupils from the fifth to the tenth year of schooling; it has a plot of land of 20 hectares (1 hectare = 2.47 acres). The members of the brigade also work in the fields as well as in the farms belonging to the sovkhozes and the selection office.

Instruction in general subjects, optional courses and out-of-school activities also plays an important part in developing interest in agricultural occupations.

Teachers of general subjects make the pupils realise that a sound education is essential for workers in modern production and that only thorough knowledge of basic sciences, combined with specialised knowledge and practical skill, will make highly productive and creative work open to them.

The geography teacher, for example, who directs the collection of information on the special ethnographical aspects of the region, teaches the particular aspects of its economic development, describes its key undertakings, both industrial and agricultural, and encourages the pupils to assemble data on this development. This whole set of data is analysed and then either included in the collections which illustrate the flora and fauna of the region, or used to show economic achievements by plans, diagrams and exhibitions. All this didactical material is used during geography, history and civics lessons as well as in out-of-school activities.

Teachers giving lessons in economic geography, civics or history inform the pupils about the principles governing villages' particular economy. The legislative principles which are applied there and the past and future of the villages. In doing so they base their instruction on data collected on the spot.

An important part of natural science teachers' work consists of teaching the pupils the scientific bases of agricultural production.

Pupils' out-of-school club activities organising a variety of exhibitions and competitions and carrying out work of social utility help considerably to develop their interest in agricultural occupati ns and a creative attitude towards work.

One of the main factors in the effectiveness of the schools' vocational guidance activity is its link with the sovkhoze, the selection office and various undertakings in the village, as well as with the latter's social organisations. Meetings are organised systematically for the pupils with production workers in senior posts, specialists, workers in the sovkhoze, the selection office and with workers in service occupations.

Another example of well-organised vocational guidance - this time in an urban area - comes from the training workshop in the tractor factory S. Ozdžonikidze in the town of Har'kov. The pupils in their ninth and tenth year of schooling of 14 schools of general education in a district of Har'kov receive their training in this workshop. This polytechnical training for work groups three elements harmoniously; production training, education linked with work and vocational guidance.

Production training is organised in a number of different branches (turning, electricity, technical drawing etc.) which have been chosen in the light of the needs of neighbouring undertakings for workers in the key occupations and the basic trades common to a large number of industries. The pupils receive a general technical training and a specialised training in the workshop. In principle the general technical training is the same for all branches. It provides the pupils with knowledge and practical skills with respect to materials, study of machines, measuring techniques (ninth year of schooling), electricity, technical documentation and the organisation and economics of industrial undertakings (tenth year of schooling). The general technical training is given mainly during the practical laboratory work during which the pupils have to solve technical problems requiring knowledge of physics, chemistry, mathematics and drawing. The content of the specialised training depends on the particular branch covered by the production training. It takes place in the form of practical work and production practice. The training workshop does work on the basis of orders from the factory concerned and other undertakings in the town, as well as from schools.

The pupils' work on production is subordinated to pedagogical requirements; its content depends upon the requirements of the teaching programme and methods as well as on the pupils' age. However, production in this training workshop also has to meet the requirements in regard to techniques, technology and work organisation of a modern industrial undertaking. During their productive work in the training workshop, the pupils have to deal with various problems involved in improving the tools employed and in the implementation of technological processes. An effort is made to develop their ability for technical creativeness, both during their work in the training workshop and outside working hours and a technical club has been organised for the young people. The pupils carry out production work in accordance with pedagogical requirements in conditions which are as close as possible to those in which workers in undertakings perform their duties; there are close links between the training workshop and the workers as a whole, within the framework of the factory's production and social activity. All these factors help to develop in the young people a creative attitude towards work, respect for the work done by workers and for the Soviet people's achievements, a sense of responsibility, of collectivism and of mutual help.

Meetings periodically organised between the oupils and the production workers, particularly young ones, and various competitions for obtaining the title "best lather operator" or "best fitter", etc. are very effective in this connection.

While they are in the training workshop the pupils see a wide polytechnical horizon open before them as they become familiar with the techniques and technology of modern production; they also acquire knowledge and skill relevant to a given work field, the habit of working and a creative attitude towards work. All these elements combined help to give the pupils what may be called an "occupational culture", develops a stable interest in them for given occupations and, in the first place, for worker occupations.

Extensive vocational guidance action has been developed in the training workshop with the help of the school's teachers. It consists mainly of help given to pupils from the fifthe to the eighth years of schooling (in the schools of the district concerned), as regards their choice of the branch to be covered by their training for work in the workshop. They are familiarised with the worker occupations taught in the workshop and with the content and characteristics of the training for each of these occupations, and they are given an opportunity to try themselves out directly at the work posts, and thus to check whether a particular job really corresponds to their occupational interests or their tastes. In this way it is possible to ensure that, when the pupil chooses the branch to be covered by his future training for work, he does so with reasonable knowledge of the various elements involved and the choice is reasonably firm. In many cases, the choice which pupils make at this stage is the same as their choice of their future worker occupation.

Vocational guidance action given in the workshop also aims at strengthening each pupil's interest in the branch that he has chosen for his training for work and at developing in him personal qualities which are of importance from the occupational viewpoint. The following means are used to this end: organisation of discussions between the pupils and innovators, advanced production workers, engineers and technicians, presentation of films illustrating techniques and technology in modern production; organisation of exhibitions of new techniques, etc., in the training workshop. Training for work given in this workshop is an important part of polytechnical education. To some extent it is the driving force as regards the pupils' choice of an occupation, because they are thus enabled to see a chance of rapid acccess to working activity. In fact, many of the pupils reach in this training workshop the first or second category in the skill scale of a worker occupation.

The training workshop's close links with the undertaking are a decisive factor in its effectiveness. The workshop is linked organically with the tractor workshop both as regards production and from the economic and financial angle. To some extent it is a sub-unit of the factory. The workshop constitutes the factory's "polytechnical centre" for the district where it is situated and thus exercises a positive effect on the organisation of training for work, on education and on vocational guidance in the schools of this destrict.

Experience has shown that a training workshop (or a combined training and production workshop created by a number of undertakings) is an effective means of organising and properly orienting polytechnical training for work and the education of pupils in the higher classes of urban general education establishments. By ensuring that the undertaking and the school participate equally in the pupils' training for work, a workshop of this kind becomes a strong link between the school and production.

Vocational guidance for young people is of primary importance for the nation. The problems involved can only be solved by concerted effort by the schools, the national economy's production, planning and direction organs and social organisations.

It has proved possible gradually to reorganise the various activities comprising vocational guidance into a systematic and coherent pattern:

- occupational information (information on the different ways of obtaining vocational training, on the training facilities available and on the employment opportunities);
- occupational publicity campaigns (action designed to make occupations which are specially needed by the economy better known to the public);
- action to develop among school pupils the qualities which will help them choose their future occupation wisely; this ability to choose a career wisely depends above all on achieving a high level of general education, acquiring skills and knowledge of a polytechnical nature and on having a creative attitude towards work;
- occupational guidance (giving the young person a scientifically sound recommendation concerning his choice of occupation or of a field of work);
- occupational selection (selection for work in a given trade or other occupation of persons fulfilling the qualifications required for practising that trade or occupation);
- placement of young people, planned in advance and systematically organised;
- establishment of optimal conditions for the work and life of young workers and specialists, and also for giving them an opportunity to continue their studies and to undertake further training;
- educating young people who are undergoing training in vocational schools; the purpose of this education is to encourage their personal development so that they will acquire the qualities needed in their working life;
- the adaptation of young workers (training in occupational adaptability).

These various activities forming part of the whole vocational guidance complex are undertaken by several bodies, but the most important of them is the general education school. The function of the school in this matter is educational, since vocational guidance is an integral part of the whole educational process of the instruction given at the school. In addition to the vocational guidance given by the general schools there is the work done in this field by the various establishments running extra-curricular activities for children: clubs for young technicians and naturalists; centres for young pioneers, etc.

The industrial and agricultural undertakings are responsible for the following: occupational information; "publicity about occupations"; adapting young people to work in a given occupation; improving working and living conditions of young workers and specialists; direct participation in training for work and education for pupils (establishment of training workshops and combined training and production centres; assistance to schools in fitting-out the workshops for training for work and providing them with the necessary material; loan to the schools of specialists required to work as instructors in training for work or to direct pupils' clubs; organisation of visits to undertakings for pupils, and meetings with workers and specialists; organisation of the pupils' work of social utility and productive work).

The planning bodies and those responsible for utilisation of manpower resources are responsible for providing educational workers with a constant flow of information on current and foreseeable manpower needs and on the recruitment of pupils by vocational schools; they are also responsible for planning and organising the placement of young people in employment.

The vocational schools and the specialised, higher and secondary education establishments are called upon to teach young people to love the occupations taught them as well as to help general education schools to widen their pupils' scientific and technical horizons.

Radio, TV, the press and publications dealing with vocational guidance provide occupational information, deal with publicity about them, help to show young people the social reasons corresponding to the interests of society as a whole which should guide their occupational choice.

Vocational counselling and selection are the responsibility of a number of centres, offices, etc.

Supervision of vocational guidance activities in the USSR is divided between a number of bodies. These include two scientific institutes under the USSR Pedagogical Academy, one of which deals with research on training for work and vocational guidance, and

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Supervision of vocational guidance activities in the USSR is divided between a number of bodies. These include two scientific institutes under the USSR Pedagogical Academy, one of which deals with research on training for work and vocational guidance, and the other with psychological research. The Institute for Research on Vocational and Technical Training of the State Committee of the Council of Ministers of the USSR and other scientific research establishments carry out research on socio-economic, psychological, pedagogical and medical problems in vocational guidance, analyse its theoretical bases and prepare, for those given vocational guidance, scientifically valid recommendations on questions of principle relating to vocational guidance.

General schools, those giving vocational education and bodies for the use of manpower resources, as well as others, direct practical vocational guidance activities. They inform general education schools about the possibility of placing the pupils of terminal classes in employment and about admission into vocational schools, prepare methodological guidelines and documentation, publish books etc. on vocational guidance, keep informed about experience in the field of vocational guidance and make the latest achievements available on a general scale.

Trade union bodies, the various youth organisations and other social organisations make a substantial contribution to pupils' vocational guidance.

Inter-departmental committees are currently being established by republic, region, town and district, with a view to co-ordinating the efforts of the various departments and organisations dealing with vocational guidance. Some republics have vocational guidance "cabinets" which have been established at the level of the republic and by region. These methodological and organisational centres direct all practical activity in vocational guidance.

The level of vocational guidance activities depends to a large extent on the training received by the staff responsible for guidance. Teachers in general education schools are prepared for such work in regional further training institutions for teaching staff and in the "methodological cabinets" established in the towns. A special course on vocational guidance has been introduced in a number of higher teacher training establishments. It is planned that all students in teacher training establishments should receive training which will qualify them to direct vocational guidance.

Consideration is being given to questions relating to the training of specialists in the fields of vocational guidance and selection. Most specialists in guidance, who are mainly theorists in it, are trained in scientific research institutes where they prepare for scientific activity by working as a research fellow (aspirantura).

The pedagogical press plays an important part in providing information about vocational guidance problems and outstanding achievements in this field. The journals "Učitel'skaja Gazeta" (Educational journal), "Škola i Proizvodstvo" (School and production), "Narodnoe Obrazovanie" (National education), "Sovetskaja Pedagogika" (Soviet pedagogy), "Voprosy Psihologii" (Psychological problems), are particularly active.

A large number of books are published in the USSR for children and young people which deal in a simple way suitable for the young people's level with the various branches of the national economy, with science and techniques, with scholars and inventors, with outstanding workers and kolkhozians. Reference books are also published as well as a variety of pamphlets on occupations and vocational education establishments.

Radio and television devote a good deal of time to vocational guidance; talks are systematically organised on occupations and vocational training facilities, as well as direct broadcasts from work places such as building sites, from factories, from sovkhozes and broadcasts on manpower needs, employment possibilities and chances of admission to educational establishments.

In our country we try, on the basis of appropriate research, to prepare scientifically valid recommendations on the implementation of socio-economic measures for contributing to the development of occupational aims in young people in accordance with the needs of our society.

For initial vocational guidance (when it is a question of first orientation on occupational activities), it is sufficient for relatively simple trade descriptions to be available. But when it is a question of occupational counselling and selection, the necessary descriptions need to contain information on the psychological and physiological requirements of the occupations. These descriptions are prepared on the basis of scientific research. It is known that occupational adaptability is acquired by the individual during the training process and while working. Our researchers, medical specialists and psychologists concerned with vocational guidance problems devote their attention primarily to working out methods aiming at developing occupational adaptability and determining counter-indications, etc.

The problems involved in vocational guidance can only be solved when the various special characteristics of the human personality are taken into consideration: psychological and physiological characteristics, interests, tastes, dispositions and abilities. Our researchers are working at present on working out adequate methods of studying the human personality in relation to vocational guidance needs.

Organising vocational guidance activities thus means above all determining the directions which this guidance should follow and the socio-economic problems involved in guidance. It will be necessary to solve these problems by means of pedagogical methods applied throughout the educational process as a whole, during lessons in school and during out-of-school activities, during the pupils' work of social utility and productive work.

Organising vocational guidance activities also means solving the problems involved in guidance by means of concerted effort by the school, by production, by the bodies engaged in education, planning and by those who direct the national economy. Finally, organising vocational guidance activities means appropriately organising the initial and further training of teaching staff and of specialists in vocational guidance, and the publication of reference books and methodological documentation and standards in this field. Vocational guidance can only be organised on the basis of methodological recommendations which are scientifically valid and which have been prepared after analysis of the most advanced achievements in the field.

The problems involved in preparing young people for life, for work, for a knowledgeable choice of their occupation and for their integration into production are of major importance for society and for each young person as an individual. Vocational guidance can do much to solve these problems. But it can only develop its possibilities to the utmost if it is linked organically with the whole complex of socio-economic and political measures which aim at providing young people with the right to work, to education and to participate in the political and cultural life of their society.

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VOCATIONAL GUIDANCE AND TRAINING FOR WORK IN RURAL GENERAL EDUCATIONAL SCHOOLS IN THE GEORGIAN SSR

by

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Georgia is a country in which, for geographical reasons, there has always been a good deal of agricultural variety. Soil and climate differ widely from one part of the Republic to another, while much of the country is hilly or mountainous. Thus:

Below 1,500 feet above sea level - 26.7% of the total area
Between 1,500 and 3,000 feet - 21.7% " " " "
Between 3,000 and 4,500 feet - 19.1% " " " "
Between 4,500 and 9,000 feet - 31% " " " "
Above 9,000 feet - 1.5% " " " "

Thus, in Western Georgia, on the coasts of the Black Sea, we find a warm, damp climate, whereas in the east the climate is continental.

The cultivation of the vine, and the growing of fruit (including citrus fruit) and tea constitutes the backbone of Georgian agriculture. But this does not mean that no attention is paid to other crops. Quite the contrary; Georgia is one of the leading republics as regards the growing of wheat and vegetables, animal production, the raising of poultry, etc. Thus, more than 230,000 tons of high-quality tea leaf are picked in Georgia every year (95 per cent, no less, of the entire tea production of the Soviet Union), 30,000-45,000 tons of citrus fruit (lemons, mandarins and oranges); 840,000 tons of corn are treated, about 400,000 tons of grapes, up to 350,000 tons of fruit, 130,000 tons of sugar-beet, up to 290,000 tons of potatoes, 350,000 tons of melons, up to 170,000 tons of meat, 510,000 tons of milk, up to 405,000,000 eggs, etc.

Our peasants have old working traditions. Hard, persistent, well-organised work done by adults cannot but have its effect on the younger generation, who from childhood onwards are used to working side-by-side with their elders in the fields.

Vocational training, introduced into the general educational system, has been of great significance. Thus, children in Forms V to VII have two hours a week devoted to agricultural skills. Those in Forms IX and X also devote two hours a week, but this time to specialised branches of agriculture: the growing of fruit (including citrus fruit), tea, vines, etc.

The aim of such instruction is to give the children basic agricultural skills and knowledge and to inculcate a serious attitude towards agricultural labour. It develops esteem to agricultural work and an urge to take part in agricultural production, while giving a child a chance to show his interest. As a result, the child is well placed to make a judicious choice of occupation.

Throughout the Republic, every rural school possesses facilities for agricultural instruction and practice. Here, in accordance with the curricula, the pupils can conduct experiments, while extending the knowledge they have acquired from the study of subjects intimately connected with agriculture. The school agricultural section has its own land on which various crops are grown, but the greatest part is devoted to the crop chiefly produced in the area around the school. For example, at the secondary school in the village of Medjhinistsali (Batum area, West Georgia) there is a practice plot measuring 4,000 square metres on which vegetables, vines, flowers and shrubs, and citrus fruit are grown. But since citrus fruit growing is the mainstay of local agriculture, 2,000 of the 4,000 square metres are given over to the growing of citrus fruit. In Eastern Georgia, at the secondary school at Shashyiansk in the Gurdjhansk area (size: 5,000 square metres), vines, field crops, vegetables and saplings are grown, and animals reared, but since vine-growing is characteristic of the area, 3,000 square metres are devoted to this. This does not mean that the pupils concentrate exclusively on the main crop. In the class-room, as on the field, an attempt is made to meet the interests of the pupils, so that later on they may be guided towards whichever branch of agriculture they fancy.

One major factor in the growth of agricultural output in Georgia is the steady increase in mechanisation and the use of chemicals. Production is becoming more intensive, state and collective farms are becoming even better equipped, and the latest achievements of science and technology are being speedily introduced into agriculture.

As a result of all this, the general education and technical training given to young people is being improved. More important still, these youngsters, while still at school, acquire a good practical basis in agricultural schools.

What, now, influences rural schoolchildren in the choice of an occupation? Firstly, their study of agricultural techniques, work on machines, participation in socially useful work, club and society activities, the example set by agricultural workers of acknowledged merit, improved housing and living conditions in rural areas, etc. Secondly, of great importance are discussions with their instructors and teachers, meetings with agriculturists of outstanding merit, family traditions, the press, radio, television, visits and excursions, and meetings devoted to choice of occupation and training for work. The most important factor in the choice of an occupation is a thorough study of those sciences which are closely connected with the national economy (including agriculture). The pupils at rural schools, right from Form I, learn something about the rudiments of these sciences and as far as possible do agricultural work of various kinds. At the same time, in accordance with the programme of instruction, various out-of-school and out-of-class activities are undertaken. In the rural school they get agricultural practice in the fields, and can become members of "young machine operators'", "young natural science students'", "young inventors'" clubs, and so on.

In the field of vocational guidance, interesting work is done by various voluntary organisations (run by the school, region, municipality or Republic), such as the "Young Friends of Nature", the "Young Phenologist", the "Young Natural Science Students", etc. In the current year, for example, at the Fifth Republican Meeting of the Young Friends of Nature, up to 40 sections from 30 different areas of Georgia took an active part. There was an exhibition at which 730 articles (plants, animals, and inanimate matter) were shown, which visitors found very interesting. In addition, young naturalists from 48 different regions have displayed more than 4,000 agricultural articles of various kinds at a Republic Exhibition. These they had grown on their school land. Such activities help to awaken an interest in the flora, fauna and other natural riches of the country.

In the village of Bobokvati (Kobuletsky region, Adzharsky ASSR), the school is surrounded by a rich vegetation of tea and other sub-tropical plants. Hence it has been possible to find land on which pupils can put their theoretical knowledge into effect, and practise what they have learnt about producing a good harvest. They have already learnt, in the class-room, how to space out a tea plantation, how to apply fertilizer, how to proceed against pests and how to collect the leaves. Seeing how interested they were in this work, the teachers have tried to inculcate an esteem of their future occupation. On the school plot, these children learn how to look after tea shrubs. In their free time (and especially during the winter, spring and summer holidays) they work on the tea plantation on the local collective farm, and work side by side with their seniors in the harvest. As workers, they continuously attain high standards, and one of them, while still a schoolgirl, was awarded the extraordinarily high distinction of Heroine of Socialist Labour. She has become the pride of the village and the area. Thanks to such vocational guidance work by the teachers, many pupils have gone on to secondary and higher specialised agricultural establishments and are now hard at work in production.

In the village of Guriant (Maharadzevsky area), there is a secondary school. Here, pupils are trained for employment on the school land and on a tea plantation (one and a quarter acres in extent) assigned to the school by the local collective farm. On the land, 4,500 square metres are given over to tea shrubs. Throughout the year, the children, in accordance with the agricultural cycle, look after the tea plantation in all sorts of ways and provide the Government with scores of tons of "green gold". Here they combine valuable practice with useful agricultural production. But what is important is that they become more and more interested in tea growing, and in those theoretical and practical skills and knowledge which will lead to a good harvest. Led by an instructor, they experiment with various kinds of tea and study the major problems involved in growing the weed. For example, they make a chemical analysis of the soil to determine on what part of the land a plantation of this or that kind of tea could suitably be created (or plantations of bay trees, or of citrus fruit). They learn when the pruning of tea shrubs is most effective, how and when tea shoots have to be collected so as to be sure of a good crop later on, etc. It is remarkable to observe how the pupils make use of the knowledge thus acquired in school when, during the summer holidays, they go to work on the collective farm. In tea collection, they observe adult standards; indeed, the quality of the leaves they collect is often higher than that of the leaves collected by the grown-ups. They become exceedingly skilful in collecting, sorting and sowing tea seed. Many, on leaving this school, go on to the nearest technical colleges or higher agricultural educational establishment. Some of them, on leaving school, join the local collective farm straight away. As a rule, they attain high standards.

The secondary school at Sagarejsk has a piece of land covering an acre and a quarter. Most of this land (3,000 square metres) is devoted to vine growing; where vines of the "Rkatsiteli" and "Saperavi" varieties are grown. Here, and on one-and-a-quarter acres specially set aside by the collective farm, the pupils learn how to look after vines, how to prepare the soil, lop and prune, how to combat pests and plant diseases, etc. Here, too, they learn how to look after their plants with mechanical aids, how to spray, turn the soil, and so on. Theory and practice are so organised that all children become thoroughly familiar with the special features of work in a vineyard. All this helps to give them vocational guidance and to direct them towards vine growing as an occupation. In fact, all the leading vine-growing specialists on the local collective farm are ex-pupils. While still schoolchildren, they acquired the necessary knowledge and skills which later on enabled them to master all the secrets of their art.

There is a village called Hutsubani, in the Kobuletsky area. Vocational guidance in the local village school is very well organised, so that 80 per cent of school-leavers begin work now on collective farms. In the village of Anaseuli (Maharadzevsky area), half of those who leave school every year remain to work on the collective farm.

Study of general subjects - physics, biology, and chemistry - provides the first impulse in the choice of an occupation. One example should suffice: in a village secondary school at Ruispiri (Telavsky area), the chemistry teacher, in guiding his pupils in the choice of an occupation, makes a deft use of the chemistry laboratory as a place for occupational experiments. During the lesson, he tells his pupils about the role chemistry has to play in agriculture and about its increasing importance in increasing the national wealth. After study of individual items on the curricula, the pupils learn in the laboratory about the physical and chemical properties of mineral fertilizers and pesticides, and how to handle such substances. After suitable theoretical preparation, the members of the chemistry club, under their teacher's guidance, undertake experiments, and produce mineral fertilizers and chemicals to combat pests and the diseases to which vines are exposed. On the school land, too, a corner has been set aside where experiments are made in the feeding of plants without soil; here, the pupils learn how to grow vegetables.

At this school, members of the chemistry club also investigate the part played by micro-elements in the growth of plants and in producing good harvests. They learn how to use mineral and organic fertilizers at one and the same time. They conduct experiments with mineral fertilizers and pesticides on the fields of the collective farm.

This approach to the study of chemistry has awakened an esteem to agricultural labour in the breasts of many. The pupils become extremely anxious to look after vines and other field crops. All this helps them when the time comes to choose an occupation in agriculture.

Industrial undertakings, building concerns and research institutes help in the vocational training of pupils, in the provision of teaching equipment, and by assigning specialists to the schools. They undertake the systematic vocational guidance of pupils. They acquaint the children with various branches of the national economy, with undertakings, state farms, collective farms and organisations, and with the commonest callings and occupations. The Mtsetsky area offers a good example. Everybody helps the local schools. Research institutes and scientific institutions in the area (the Georgian Agricultural Research Institute, the Georgian

State Selection Station, the Muransk Experimental Farm of the Georgian Agricultural Institute) actively help the schools in the better use of their land and in conducting experiments thereon. Scientific workers from the research institutes and scientific organisations are attached to all secondary and eight-year schools. With the teachers, they do explanatory work, direct the work of the pupils, and help in endowing them with the requisite theoretical knowledge and practical experience.

The initiative taken by the patriots in the Mtsetsky area has received the approval of the Ministry of Agriculture and the Ministry of Education of the Georgian SSR. A joint decree was issued, whereby to improve school teaching in biology and the effectiveness of practical work done, the scientific research organisations and agricultural technical schools responsible to the Georgian Ministry of Agriculture were instructed to assist the schools in running their land and conducting experiments thereon, in ensuring that the children make a thorough and profound study of biological subjects, and in the training of these children for work. These institutions have to assist by consultations, practical advice, the provision of seeds, chemical preparations, etc., and have to supply the schools with machines, instruments and equipment for teaching purposes. The agricultural research institutes of the Republic, the agricultural technical schools and departments of education are requested to extend their patronage to the schools to the utmost possible degree.

Departments of education, schools and research institutes responded warmly to the initiative taken by the people of Mtsetsk.

Here is how vocational guidance proceeds in the schools of Chikvinsk (Kobuletsky area). These schools are wonderfully situated in an area where sea and land combine to form a landscape of extraordinary attractiveness. Here we find an all-union agricultural chemistry laboratory, three tea plantations, and, first and foremost, a tea-selection plantation. The latter is managed by Academician Ksenya Bahtadze, Heroine of Socialist Labour. She is in close contact with the school-children, frequently making the rounds of the schools and chatting with the older children about the significance of tea growing, the introduction of new strains of tea, the choice of an occupation. She often talks at length about the high significance of agricultural labour for the nation as a whole.

The Russian and Georgian secondary schools, for the purposes of their practical work, make use of the services provided by this tea-selection plantation, where the Academician explains the workings of the nursery, how shoots and saplings are looked after, the rules governing the use of fertilizers and the basic problems of selection. In this plantation strains of tea known the wide world over, such as "Georgian Selected Tea No. 1", "Georgian Selected Tea No. 2", etc. have been introduced. These new strains are characterised by very high yields, and robustly stand up to low temperatures. After tests and checks, these strains have spread beyond the borders of Georgia and are now being grown in the lower regions of Russia and in Adjerbaidjan.

Practical work done at this tea plantation at Chakva, excursions, meetings with research workers, etc. have stimulated the pupils to take up an occupation during their free time (especially during the holidays) and to do systematic work in the plantation. Here, little by little, they acquire a sound knowledge, theoretical and practical, of the exceedingly complex rules governing selection. Thus it is that after leaving school many of them remain to work in the plantation, or continue their studies, either in the Georgian Agricultural Institute or in the Sukhomsk Sub-Tropical Agriculture Institute, eventually taking a degree as "agricultural engineer".

There is a village called Gurni (Tkibulsky area). Here too, vocational guidance is given in close co-operation with scientific institutions. The village school has a well-organised piece of land measuring nearly 4 acres; tea is grown on five-eighths of an acre, a fruit orchard occupies one acre, and a miscellaneous plantation one-quarter of an acre; yearling crops occupy one and one-eighth of an acre, etc. Vocational guidance is given as part of both school and out-of-school activities. The theoretical knowledge acquired on the school bench is rounded off by practical work on the school land. The school is in touch with republican and all-union research institutes specialising in sub-tropical crops and tea. These ties have continued for a number of years and have become, indeed, traditional. The scientific personnel from these institutes willingly give the pupils a hand. They often visit the school, advise the teachers, see what the pupils have been doing, and check that the experiments made have been properly organised and serve a useful purpose.

As a result of the experience acquired, the children have increased their knowledge of everything to do with the art of growing tea - the rules governing the growth of the vegetative parts of the tea shrub, and how such growth is affected by the environment, how yields can be increased by cutting away the vegetative parts, the peculiar effects of pruning and picking on the chemical contents of the tea leaf, and so forth. Studying these theoretical questions, the children have acquired practical skills as well, i.e. the art of cultivating the soil in a tea plantation and what doses of mineral fertilizer to use, how to prune, how to use pesticides and how to use a spray and how to pick tea. Such out-of-school work increases the children's esteem to agriculture, as shown by the fact that between 60 and 65 per cent of secondary school-leavers remain as workers in the local collective farm, while the remainder continue their studies (mostly in a VUZ offering special courses in agricultural matters).

Our general conclusion must be that the links between school and production, between school and scientific organisations, meetings between schoolchildren and scientific personnel and collective farmers, practical participation in selection work - all these things inculcate an esteem to work on the land and put a child on the right road towards the choice of an occupation.

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Working Paper on

VOCATIONAL ORIENTATION OF YOUTH IN THE SOVIET SOCIALIST REPUBLIC OF GEORGIA IN RELATION TO BASIC OCCUPATIONS

by

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The problems confronting the further development of our national economy require us to supply skilled workers for a wide range of industrial sectors. In 1970, the labour force of the Soviet Union will exceed 90,000,000. This enormous army of workers and salaried employees will continue to grow and will require systematic reinforcement.

In our country, technical progress and continuous improvements in the cultural and vocational level of the workers is changing the nature of the work as well as occupations, specialisations and the distribution of the workers themselves within this framework. A great many old occupations, characterised by manual work, are disappearing and are being replaced by new ones, based on modern science and techniques.

Methods of production requiring arduous manual labour are giving way to new methods which are highly mechanised or automatic. Automation and related advanced technology, precision instruments of measurement and control, occupy an increasingly important part in the production system, and their use requires manpower with great competence and high qualifications.

In these circumstances, the training of these workers is only possible on the basis of solid general knowledge, that is, after a secondary level of education and training. Experience has led us to this conclusion.

Vocational and technical education is the way by which young people become skilled workers. This type of education is being continuously developed and improved in the Republic and is given very considerable attention by the State. Thanks to this constant preoccupation, the network of vocational and technical training institutions is expanding steadily, and also the number of future skilled workers being trained within it. While in 1960 5,370 workers were so trained and in 1965 7,490, in 1970 the number will be 18,600. However, despite this considerable advance, the needs of the economy for skilled workers move forward so fast that they are still only partially met.

Our young people are taking their responsibilities seriously. In any girl's or boy's life, the moment of defining their future role and deliberately choosing an occupation is of considerable importance.

As a general rule, it is young people of 15-16 years of age who go into technical schools after 8 years of general education. Experience indicates that, in choosing their future occupation, a great many of these young persons allow themselves to be influenced by haphazard considerations rather than by mature reflection. On entry into technical education establishments, they often have only a vague notion of the occupation for which they are preparing. This gives rise at a later stage to lack of interest in their work, low productivity and too many job changes.

It is for this reason that the vocational orientation of youth has such great importance - social as well as economic. The basic aim of this guidance is to help young people choose their careers correctly with due account of their aptitudes, capacities, interests and stage of physical development, and with due regard, at the same time, to the needs of the various sectors of the economy of the region.

On 2 April 1969, a Decree was issued on measures designed to continue to improve the training of skilled workers in technical education institutions. The National Committee of Ministers of the USSR for technical and vocational education made recommendations concerning the participation of the organs of technical training in the work relating to the vocational orientation of youth. As a result, the personnel of the technical and vocational institutions have developed an increasingly wide range of activities with young people to help them to prepare for and find a place in occupations in which the demand for their services is greatest.

This is the more important since the programme for admission to vocational and technical schools and colleges is becoming more and more ambitious (in 1970, some 22,000 pupils were admitted). A series of measures has been taken to make it possible to increase the admission rate by two and a half times in four years.

With this concern to assure an appropriate vocational orientation for young people and to spread information about the occupations, which can absorb them in the greatest numbers, the National Committee for technical and vocational education of the Council of Ministers of the Republic of Georgia publishes every year information leaflets for potential candidates and posts notices to draw attention to and inspire the interest of young people in training for these occupations. Along with other measures, there are municipal and national competitions where the winners obtain a certificate of vocational merit, expositions of products made by technical and vocational education pupils and "open house" on certain days for visitors

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to the institutions. This year, for example, we published and distributed to the schools and other organisations two information bulletins (in Georgian and in Russian) for candidates for technical schools. Moreover, the National Committee for technical and vocational education of the Socialist Republic of Georgia contracted for a special film which describes the training, education and work of the pupils of these institutions.

Special importance should be given to the competition organised this year in the vocational and technical schools of the towns in order to select the best specialists in the various occupations with the grant of a corresponding title (turner, milling cutter, machine setter). In the villages, the same type of competition was organised to designate the best specialist in power-driven cultivators. The advisory committees for these competitions included leading workers of the Central Committee of the KOMSOMOL in Georgia, representatives of large enterprises, members of the National Committee for vocational and technical education and personnel from the institutions for such training. Pupils and teachers from secondary schools were also invited. The winners received certificates and substantial prizes. Press articles and radio programmes about these competitions also helped spread information on basic occupations for youth.

Effective action in the field of vocational orientation depends on good co-operation between the various institutions and services of technical and vocational education, on the one hand, and other organisations, on the other. In order to ensure such collaboration, the Ministry of Education of the Republic and the ministries of the various economic sectors issued joint decrees on the measures needed to promote vocational orientation, to ensure the intake of new contingents of pupils and to organise the distribution of these amongst the various schools. Moreover, meetings were held for all the students of technical schools throughout the country.

The national centre of pedagogical methodology drafted and distributed to the schools a list of the subjects proposed for discussion at conferences and meetings on questions pertaining to the vocational orientation of young people. Information leaflets giving the list of occupations for whith training was offered and booklets on the life, training and work in the technical schools were sent to public libraries as well as to centres of young technicians, with the request that this material be brought to the attention of their readers.

The schools section of the National Committee and the study bureau on pedagogical methodology for technical and vocational education hold systematic consultations and lend their help to secondary schools for organising vocational orientation rooms and services. Documentation is ensured jointly by the teaching staff of the secondary schools and the vocational orientation collaborators.

The newspapers of the Republic, the towns, the villages and the factories and radio and television programmes bring into the public eye systematically the activities of the institutions of vocational and technical education, the study and work of their students and the problems of the vocational orientation of young people. In most cases, it is the teaching staff of the technical and vocational institutions who provide the material for these articles and programmes.

In order to provide vocational orientation, the vocational and technical schools use a wide variety of methods and procedures. Thus, to maintain permanent contact between the teaching corps and the public at large, there are "open house days" to which the pupils of secondary schools and their parents and teachers are invited and at which they are shown in detail the work and equipment of the schools, the different occupations, the knowledge and aptitudes required for them, those who have made a brilliant success in them, sports facilities, dormitories, etc. Special exhibitions and stands are mounted for these "open-house days", prepared by the best pupils and former pupils of the institution in question.

The visit to the school by the parents and the meetings held with them have considerable importance in vocational guidance because they make a great impression on the parents. Moreover, at the New Year, the first of May and other holidays, letters of thanks are sent to the parents of the best students. What parent would not be happy to receive this official testimony of the success of their boy or girl or to share this joy with friends, neighbours, work colleagues?

The example of the pupils themselves has a favourable influence on vocational orientation activities. Experience shows that well brought up young people perfectly equipped for their occupational career easily become a model for their comrades to imitate. Thus, for example, a young boy from a small village called Likheti entered the technical school of building No. 18 at Tbilissi. Somewhat later his village school-friends came to visit him. They heard that he was getting on well with his studies and saw the conditions in which he was living. They visited classrooms, laboratories and workshops and decided to register for admission. They went back to the village for the summer holiday and when they came back again five other young people were with them. At present, 12 villagers are studying in the school. But it is clear that results of this kind depend, amongst other things, on good organisation of the work and good education and training for the pupils.

Many examples may be cited of the careers of former pupils who have studied well, acquired a sense of discipline, assimilated more modern methods and, later, once in the production world, have honoured their occupation by becoming Heroes of Socialist Labour. It is natural that these examples should play an influential part in the vocational orientation of young people.

A further important factor is the propaganda made on behalf of certain occupations. This is in the form of conferences and talks given in secondary schools by the directors of technical schools, by the best instructors of industrial education, by the professors and by former students, especially the Heroes of Socialist Labour, who are not in short supply in the Republic. Take, for example, weavers like Eteri Solomonia and Nanculi Tcherkezichvili, or machine setters like I. Khazaradzé and Chx Pirtzkhalova. A former railroad worker, driver of an electric locomotive, former pupil of the railroad school No. 31 at Tbilissi is now running this school. The head of the workshop of the metal-working factory of Roustai, P. Tzeretili, is himself a formal technical education pupil.

The teaching staff of the schools Nos. 5, 11, 18 and 31 at Tbilissi, No. 33 at Koutaysi, No. 44 at Batoum and very many others organise their propaganda work in favour of the basic occupations in an intelligent and effective manner. In May this year, in the secondary russo-georgion school No. 145 at Tbilissi, directed by comrade Kotliarovskaya, at the meeting with parents, conferences were given by the Director of technical school No. 38 of Tbilissi, G. Baladjichvili, and the vice-director of the national technical school of the same town, comrade Roussia. In the secondary schools of Tbilissi Nos. 84 and 89, in the same month, evening meetings were organised during which the pupils of these schools and those of the technical schools Nos. 27 and 41 and the technical college No. 38 took part in a series of discussions on the theme "Labour - an affair of honour, glory and heroism". The best students of the vocational and technical institutions took part in these meetings which concluded with a concert given by student amateur-musicians.

In order to ensure closer contacts between the vocational technical schools and the secondary schools, the staff of these schools - industrial instructors, professors, teachers - are grouped around the institutions of secondary education of the microdistrict. They take part in meetings of boards of professors and speak there, they organise talks with pupils and parents, and in general they play an active role in all communal enterprises.

The teaching staff in the field of technical education has acquired a great deal of experience about the education and training of skilled young workers. The instructors and professors of the technical school know thoroughly the characteristics of their occupation and the level of skill required. They know how to organise the training effectively in relation to the exigencies of production in the trainee's future trade. Moreover, they are able to develop amongst the pupils respect for work and love of their trade. Thanks to these qualities, they give effective and concrete help to the staff of the secondary schools in the efforts made to ensure vocational orientation for their pupils.

Certain occupations - for example, those of machine setter, automobile mechanic, radio electrician, electrical engine driver, sailor, engraver - are very popular with the young and schools which provide training for them rarely have difficulty in using their capacity fully. However, young people attracted to these occupations are often unaware of what is required of them in their chosen trade and what employment possibilities the trade offers within the framework of the national economy. Given their ignorance about the characteristics of the different occupations, they are not in a position to assess the intellectual and physical aptitudes required for undergoing training in them. It is for this reason that, along with vocational orientation, the method of interviewing young people is used on a large scale to make possible systematic vocational selection which, in turn, contributes to the rational recruitment of candidates for training and to the success of their studies.

In carrying out the work of vocational orientation, an effort is made to ensure that the young people enter technical schools with a clear idea about the occupation they have chosen and that their choice responds to an awakening of a calling for it. Such an aptitude has a favourable repercussion on all the education and training carried out both by the secondary schools and by the technical education institutions.

In our view, vocational orientation should start in the 5th or 6th grade of basic primary education and not with the pupils of the terminal class, whether this be the cycle of 8 years or that of 10 years. It is also important that the elements of vocational orientation are included in the teaching of such subjects as physics, chemistry, sociology, history, botany and biology. It is also necessary to take them into account in the practical work carried out in workshops.

It must be emphasised that the vocational orientation of young people has been carried out for a long time but in the course of recent years the work has become more systematic, more rational, more scientific and better planned. Its results are already being felt by large numbers of the population. In Leningrad the Institute of scientific research in the field of technical education in the USSR has set up a special section for perfecting vocational orientation interviews. We already receive practical help in the form of leaflets and folders containing valuable recommendations concerning scientific methodology.

In Georgia, a section has been set up within the pedagogical society of Tbilissi to study together questions of technical education and vocational orientation in the whole of the Republic.

Vocational orientation is a system based on scientific data pertaining to occupational choice. In recent times, with the emergence of new scientific methods for the direction of the national economy and the ever-growing need for skilled workers, vocational orientation has taken on new importance. The objectives pursued through it pose new theoretical and practical problems whose solution must be found in the near future. In order to obtain the desired results, it is essential not to lose sight of the basic aim and to act in a continuous and systematic manner on several fronts at once. Another question also arises: the creation of a service of youth vocational orientation at the level of the Republic. A national system of vocational orientation would help to perfect a plan for single selection, to organise the allocation of the pupils for work periods in industry, to ensure the placement of young workers and to combat manpower drift.

Community organisations, especially trade union and KOMSOMOL bodies, technical education personnel and the pedagogical corps of the Republic spare no efforts in order to ensure that our youth, our pupils, receive an education based on the glorious traditions of labour established by the older generation of the working class. It can be hoped that the younger generation will follow worthily in their footsteps.